Small but mighty Run a \$2.5B company with five IT staffers? You bet. 29



Roller-coaster ride Dan Gillmor: Insane stock market is good for corporate IT. 26



Slugfest safety

Database helps Cardinals keep order as McGwire breaks home run record. 14

The World's Technology Newspaper www.computerworld.com September 14, 1998 • Vol. 32 • No. 37 • \$4/Copy

## Want to cut TCO? Sweat the details

Users find no silver bullet, concept fails to catch on

Re April Iocobs

A YEAR AFTER total cost of ownership first exploded onto the requires at minimum good asdesktop scene, few users report set management, efficient deliv-

making much headway in cutting costs. The main obstacle, according to users and analysts, is the complex and nitty-gritty

nature of process itself. Despite stacks of reports pushing

and dissecting the expect to quantify concept and scads of products that returns on projects supposedly help

gy shops reduce costs, there

Nancy Parker: Fed-

is no Band-Aid or one-shot answer. The reality is that to reduce or even control IT costs

> ery of services. appropriate orga nuzation analysis of financials. And that requires getting really granular. In a recent re-

port, Boston-based Aberdeen Group, Inc., said its "most important finding is that the

notion of a precisely calculated corporate information technolo- TCO for desktops, servers or TOD, page 93

## ERP: The Next Stage



There's a disconnec between what ERP vendors are pushing and what osers are looking for Page 6:

Users: Microsoft no bully

society.

Feds might argue it strong-armed users By Stewart Deck

DID MICROSOFT CORP.'s alleged strong ann tactics extend to the this to do something good for user community? The government last week appeared ready to ANTITRUST make that argument.

but in a random poll of 18 users, no one told Comextensorid that they had been buy software from all different pressured by Microsoft or knew 'Absurd!' That's how Sam dent of product engineering at

Cox, chief information officer at Heet Bank in Hartford, Conn Brother Industries Ltd.'s U.S. operations in Bartlett, Tenn., Jwith Microsoft," echoed Timplabeled the Justice Department's

latest gambit. "I've never been pressured by Microsoft, and I think the whole investigation is a waste of taxpayers' money. Cox said. 'They should use

the money they're spending on

Microsoft pressuring us or any other company to not buy other vendors' software - and we vendors. Microsoft included." said Stephen Brown, vice presi-

T've never had any problems lisers, name 92

Consultants' travel costs draw IT ire

By Julia King

NOTHING THES Andy Hafes more than watching one of his "I never heard of out-of-town IT consultants sail out of the company parking lot behind the wheel of a cushy Lincoln Town Car

The reason: 'I know darn well that car-rental expense is going to come back at me," said Hafer, chief information officer at Hydro Agri North America. Inc. in Tampa, Fla.

"I'm sick and bred of paying ridiculous consultant travel Consultants', page 16

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## Briefi

Within hours after Swissair flight 111 went down, the company's Web crew redid the site with information to help relatives of the victims. Webmasters added bandwidth to support a flood of hits, responded to E-mail from victims' families, and posted regular news updates. Crisis managers call the measures - which include an online condolence book visitors can sign a model of how technology can help companies respond to a disaster. Page 18

off people skilled in any of the major enterprise resource plan ning (ERP) packages can demand up to \$200,000 per ye But in many firms, there's no of an ERP project, so many bone up on business skills to stay flexible and productive. Others look to consultancies i

Buying fish is harder than you thought. Restaurants and retail-ers often have to call dozens of urces to get the kinds they ant. A food industry credit reporting company named Seafi is trying to make that easier with a World Wide Web site to

put buyers and sellers together, and planning to do a whale of a business. Page 33

a Stock options fueled much of the rise of the tech industry, but with Wall Street snapping up and down like a yo-yo, how long can it go on, Dan Gillmor s. Workers who've taker salaries over stock now don't have to feel like chumps, and the chaos may make it easier for corporate recruitars to co pete with start-ups. Page 26

\*Most people use ERF applica-tions for basic operations, but some use them to tie in to the

ystems of new acquisition morove decision-making a sutomate supply chains. No s want ERP vendors to do re integration work, make it

turns out to be a pretty useful tool for futures traders, who can blast quick warnings out to a list of clients when the marhat turns sour. It's much fast than faxes, offers easy two-w communication and, with the AbbottChat package at least, decent security. Page 33

n First Union bonk in Charlotte, N.C., is working on a way to let commercial customers transfer funds over the Internet. It doesn't think it can make much money on the project, but it hopes to attract and retain lutive customers with the fi olity of the service. Still, ma internet banking projects he turned out to be less profits than expected. Page 8

There's no defense again Mark McGwire dinger, but Major League Baseball use technology to help prevent a melee of fans scrambling for No. 62. It tracked his previo to the places the homers we most likely to land. Page 14



## In this issue

SPECIAL REPORT

## NEWS

- ppised toole to link Notes, Ex-Microsoft pushes migration tools.

#### TECHNICAL SECTIONS

- oteres traders that with clients like, specifing buy/sell servings in a
- THE DESTRICTED AND MACHINE TO SERVICE THE SERVICE AND ADDRESS OF THE SERVIC

## SAP influence rockets as sales boom

▶ ERP vendor could collide with Microsoft By Crase Stalmen

a/s usees are starting to see a lot of Microsoft Corp. in SAP

The German vendor is approaching Microsoft-like clout at the comorate level as sales of its enterprise resource planning (ERP) applications keep mush rooming and more users buy in to its attempt to position R/s as a full-fledged business back bone around which other software has to resolve

product development bent, oth-er software makers are rushing to bask in SAP's aura by tying their applications to R/s (see story at right). A horde of a60 technology windows and consultthe companies have anted up for booths at SAP's Sapphire '08 user conference, which is expected to draw about 15,000 people to Los Angeles this week Of course, SAP isn't nearly as universally entrenched as Mi

crosoft is at this point. R/3 out-

And despite that appressive bles "sets up the potential for an SAP/Microsoft battle" for en terprise-level dominance, said Jim Shepherd, an AMR analyst For example, analysts said SAP, which just a year ago was playing up its support for Windows NT and Microsoft's SOL Server database, has now adopted a more ecumenical apnemach to underly ing technologies

the head of a fast-growing num-

such as operating And as SAP tries to establish

R/s as a backbone in its own right. "I

think that makes Microsoft a little pervous," said Itm Holincheck, an analyst at Giga Information Group in Cambridge. Mass. The two companies "have

drifted apart a bit," he added. They're not out there shoulder to choulder now At some SAP shops, business operations already revolve around R/s far more than Mi-

crosoft's operating systems and other products. R/s really is at the center of what we do," said Mike Panesus.

director of management information systems at Church & Dwight Co. in Princeton, N.I. The maker of Arm & Hammer baking soda began running its ceate applications on R/3 m April, and Panesis said the SAP vare now affects all technol ony decisions

On the other hand, Church & Dwight thus far has avoided Windows NT servers and Microsoft's BackOffice software \*Whenever someone has this much power, it can be abused? Panesis said. But frankly, I

thought SAP would be worse ber of corporate computing tathan they have been. They were much more willing to listen to us and to work with third-narty vendors than we expected.

Brother Industries Ltd., a Japanese maker of printers, typewriters, sewing machines and other products, uses Microsoft's desiston products. "Rus I see SAP as my backbone and Microsoft as a window into that backbone." sand

Sam Cox, chief information officer at Brother's U.S. operations in Bartlett, When R/3 could-

n't handle Brother's product pricing formulas, the company decided to change them to fit the software. Cox said. And the more applications SAP develops, the better, he

To avoid integration hassles Cox said he wants to look at tying third-party products to R/s only "as a sery last resort."

ENTHUSIASTIC BACK Farmland Industries, Inc., a \$0.1 billion farmer-owned coop-

erative in Kansas City, Mo., also has bought in to SAP's back bone pitch and plans "to incorporate as much of our business under R/3 as possible," said Dick Weaver, technology manager for Farmland's petroleum and crop production units.

A similar strategy is in place at Lucent Technologies, Inc.'s power supply unit, which plans to switch finance, production planning and its other back office applications to R/3 this

But I went needs to book six third-party or custom applica-

makers.

Bouble trouble

es to R/t on the one le mes right out of t

"It's akin to Microso sproach," said Heinz R are lob in Palo A Third-party we our they have to run fi

SAP's strategy "is very nuch like what Microsoft is icing, and it isn't about beg universally liked at all," sid Jim Shephard, an analyst at AMR Research. Even SAP's yours of o

- Craig Ste

tions to R/s, "and which parts line you get Ifrom SAP on openness| depends on who you talk to," said Karen Peterson, manager of business process planning at the Lucent unit in Mesourite Terre SAP's growing clout "does

sort of worry you, just in the same way that Microsoft scares people," she added O of Linux endorsement from a large applications vendor is

## Nonetheless, R/3's place at Oracle to support Linux platform

ness under R/3 as cossible

search, Inc. in Bo

sells its closest rivals almost

threefold, but that still is expect-

ed to give SAP only 32% of the

this year, according to AMR Re-

enterprise applications market

 Endorsement aids push toward legitimization By Stewart Deck most large organizations from

ver save his c

te as much of our busi

For example, industry analysts said. SAP has been able to

freeze buying decisions for ap-

plications such as supply-chain

management software by an-

nouncing plans to expand its

reach into those markets.

ORACLE CORP.'s ann last week that it will port versions of its database and applications to the Linux platform could give the open-source Unix operating system another nudge toward enterprise accept-

Although acknowledging that Linux is a dependable operating system, many analysts and users have said the lack of formal technical support has kept

considering Linux as an alternative operating system for mission-critical applications (CW,

Aug. 31). There are IS managers who won't even consider Linux be cause it is not backed by a known name," wrote analyst

Bill Peterson in an International Data Corp. (IDC) report. Framincham, Mass based IDC is a tister company to Computer-

igh Oracle won't pro-

vide technical support for Linux it will work with Linux vendors including Red Hat Softwa Inc. in Research Triangle Park. N.C.; SuSE, Inc. in Oakland, Calif.: Mountain View, Calif. based VA Research. Inc.; and Tokyo-based Pacific HiTech, Inc. - on marketing and technol-

POSSIBLE STANS Arrind lain, a senior product manager at Oracle, acknowledged that it would take time to nge public perception about Linux but said that "by offering

our database and our applications (on Linux), we will pro-mote further adoption of it as a iable platform.

it is possible that Linux will become the standard Unix for PCused systems. Paul McNamera, vice presi dent of strategic relationships at Red Hat Software, said that sort

Oracle CEO Larry Ellison said

critical to corporate decision-"They're looking for signals: that indicate that this really in a prime-time operating system," he esid Jack Tackett, a manager of

ystems operations at Nortel, Inc., said Oracle's move should help push the doors open for legitimate use (of Linux) in more organizations."
The Nortel Information Net-

work runs Oracle applications on Windows NT, but "we're susty waiting to get the Oracle for Linux beta to see how it will fit in with our current systems," he said. Cl

# Netscape

>> NOW PLAYING THE MARKET

IFARDED a la before the feeting competition seed of online investing, the called being seed of the regular or market more than an accurage years, the regular competition and the received competition and the receiv



## Microsoft, Compag seek enterprise NT

Reliability, scalability technologies on tap, but no delivery dates set

#### By Jaikumar Vissyan

COMPAN COMPUTES COSP. and Microsoft Corn last week unwelled an ambitious joint devel opment plan to make Windows NT a safer place to ruo large rate appli

But users will have to wait a long time before any of the new features become available Officials said most of the capabilities won't be ready until well after the arrival of Windows NT s.o - which still doesn't have a definite shapping date

Officials at the two companies said they plan to meegrate several Compaq-owned technologies, developed by subsidiarie: Digital Equipment Corp. and Tandem Computers,

Inc., into future versions of NT. The joint initiative includes technologies such as Tandem's NonStop Kernel, as well as clustering and management caps bilities from Digital'a OpenVMS and Unix technologies.

#### ALREADY IN PROGRESS

The idea is to build a more scal able and reliable version of NT using core capabilities from those enterprise-hardened openating environments, spokesmen for both companies said it isn't a new effort: Vendors such as Digital, Hewlett-Packard Co. and Tandem have been trying to integrate bits and pieces of theu high-end server technologies into their Windows NT server plat-

forms over the past two years.

But in this latest chapter. Compaq and Microsoft gave on details on when an NT session featuring the Digital and Tan-BUILDING MORE INTO NT

## Companies: Compaq and

What technologies are being Integrated: Clus tered transactional and recovery services, remote mirroring, cluster file system, data and file partitioning, and remo

dem technologies will become available "The biggest question is.

lem is crucial for Fairbank

ality going to get here? The need for it is right now," said lames Garden, an analyst at Technology Business Research. Inc. in Hampton, N.H. "If what they are touting in

available now, it would be nice," said Eric Dickstein, a lead technical analyst at Continental Grain Corp., a \$14 billion agriculture firm in New York, Dackstein said he expects it could take years for the Microsoft? Compac effort to bear fruit.

The whole universe can change in that time," Dickstein said Rob Young, a consultant at Data Systems, Inc., said borrow ing from technologies such as OpenVMS and Unix will make

what Compaq gets out of this ing Microsoft fix NT Server. said Young, who works at Du Pont Science Computing Divisson in Wilmington, Del.

Compag and Microsoft also an nounced plans to build a range of interoperability tools and technologies that will allow users to better integrate then Windows NT and Digital Unix

The latest move will build on the AllConnect Unix/NT inte gration program Digital had in place as part of a broad technology alliance with Microsoft. So far, AllConnect integration tools and services have been offered as an option to Digital Unix users. Under the new ininative, both Microsoft and Compog will work on building the

hooks directly into future ver-

sions of Digital Univ Fl

## Digital Nervous System shows promise, but users wary

Las Vicas

concere

WITH BEAL-WORLD PROBLEMS to solve and diverse systems to opetate, users at Microsoft Corp.'s first Business Applications Conference last week said it will be a while before they can adopt the company's Digital Nervous System application integration Hooker, a financial programmer/analyst at Countrowide Home Loans. Inc. in Calabassas, Calif. "The problem is going to be in implementing it. The concept is a useful framework. Hooker acknowledged, but his need is much more pragmatic: The current complicated mightly batch trans fer that ports data from AS/ 400s to a SQL Server so that re-

who eventually would like to pursue a few Digital Nervous System-like projects, such as building an intranet and enabline salespeople at conferences to place orders for the

#### company's insurance, tax and law publications remotely GANIZATIONAL LIMITS

Other users said they have org nizational rather than technical hurdles to leap before they can realize the goals of Digital Neryous System or even wider adoption of Microsoft tools.

Kenneth Folkman, a progr nalyst at Hill Air Force Base in Clearfield, Utah, said with so much closely guarded legacy and Oracle data at Hill, the adoption of a more Microsoft oriented framework of wide spread data sharing isn't likely to happen soon. Folkman's unit. which is responsible for repair ing planes and missiles, user tom Windows applications to control costs and automate

Pamela Young, manager of financial and admin terns at New Jersey Transit, said the technical usues holding being beeped at 4 a.m. when back the public bus and train system's procurement messag-

ing system are simple. What she sought at the conference was help making the business case for the needed changes "to my mind, in my heart I can feel and I can touch exactly what is needed - but more is needed. I have to be elo-

Keyin Wolf, a member of the professional services team at sales force automation vendor CWC, Inc. in Mankaso, Minn., said that until more large corporate customers begin to buy Microsoft's enterprise story, all the

NT more robust. "I don't know

race in the world won't help him sell Windows NTbased systems. Users with heavy investments in Unix have demanded that the company also produce its product with Java front ends built with Sun Microsystems, Inc. tools, Cl

Microsoft's goal at the conference was to convince users that it is a company with a cohesive story for addressing overall strategic needs and doesn't just have a set of tactical tools, said Paul Gross, vice president of the tools division. The thrust of that

pitch is the Digital Nervous Systetn, which is Microsoft's version of the common idea that companies should integrate electronic-commerce, messag ing, decision-support and other applications to make key news and data available to whoever

can act on the infor "In an ideal world, it would be great if all your applica were integrated," said Chris ports can flow to Windows Hooker said

DIGITAL NERVOUS SYSTEM

not It is: Microsoft's label for the idea of integrating terprise applications and data to ensure that employs we access to key information.

re: A useful framework for thinking about information haring and application architecture.

Con: The idea is sprawling and ebstract, making it daunting

and potentially costly to implement on a grand scale.

clienta is too prone to glitches. Better inter mean more efficient support for traders and analysts who group mortgages together for sale to investors on the open market. It also could end the occasional nightmare Hooker's boss faces.

#### the batch job hits a snag. John W. Fairbank, inform

technologies manager at National Underwriter Co. in Cincinnatí, also is fighting in the hes to integrate Windows with AS/400s. Solving that

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database costs by 54%.

Oracle	Ora	acte	\$54.040				
SQL Server	Microsoft				\$116,960		
	0	\$20	\$40	\$60	\$80	\$100	\$12

An undependent study, conducted by the Business Research Group (BRG), established that the Oracle\* database on Windows NT delivers
53% lower Total Cost of Ownership per site compared with Microsoft SQL Server. If you want to lower your Total Cost of Ownership, count

on Oracle—the database market leader. By the way, we're also the number one seller on Windows

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## Bank seeks 'net gain

First Union site will cater to corporate clients

By Thomat Hoffman FIRST UNION CORP. has an nced plans to become one of the first banks to offer corporate customers the ability to transfer funds over a secure

Internet site Although First Union's WebAchieve service usn't expect. ed to belo the Charlotte N.C. based bank generate significant treente in the short term, analysts said it should provide the bank long-term strategic advantage in retaining and attracting lucrative corporate chents.

Many companies still following the re-engineering mantra of the early 'oos are streamlining their internal processes and examining how much it costs to cut a check to a business partner. A Fortune 500 manufacturer that spends \$10 to \$15 each time it sends a paper check to one of its suppliers can cut its administrative costs by 30% to 50% - adding up to thousands of dollars - by processing those payments electronically said Rasery Agarwal, ao analyst at The Tower Group, a Newton.

Mass-based financial services consultancy. Agarwal expects commercial bank customers to initially conduct electronic funds transfers for transactions of less than \$5,000. For larger transactions. est companies will either wire the funds directly to a business partner or write a check when same-day payment iso't necessary, thus letting companies "gain some float," or interest on those funds, until the check has been cleared. Agarwal said.

WebAchieve (The "Ach" part stands for "automated clearing house') is part of a \$70 million effort over the next two years to develop electronic cash maragement services. Other banks that have introduced World Wide Web-based funds transfer in clude First Maryland Bancorp in Baltimore and Chase Manhat-

tan Corp. in New York To date, few Internet banking projects have delivered significant payoffs [CW, Aug. til. A report released last week by New York-based Ernst & Young LLP. said only 1% of more than 100 financial institutions surveyed ranked selling more products or services as their most important electronic-commerce goal (see

Although First Union hopes to reduce the costs of distrib ing and installing the PC software it has offered customers for the past to years to conduct electronic funds transfers, there is a financial trade-off with the Internet-based service. First

#### E(MPTY)-COMMERCE t have a business strats

- # 70% don't have a pricing strategy for E-commerce
- 8 14% ranked gaining new customers as an integral objective of their 8 1% ranked selling mo
- products or services as their most important E-commerce goal Rose: Survey of more than 100

banks, brokerages and insura including the U.S. Furence I of America and Asia

Union (was firstunios com) is setting up WebAchieve on a separate set of servers behind its firewall for security purposes. "We're spending a lot of money on that," said Leslie Graham, vice president and automated clearinghouse product manager at First Union. She declined to disclose those

Still. First Unson is viewing WebAchieve as "a long-teem investment," Graham said. She added that the bank expects to begio testing the service with fewer than 50 customers in the next few months before launching WebAchieve at year's end O

didn't respond are either un

aware of the severity of the

he said.

Several chief

year 2000 proi-

## Users seek tools to tie plants to back office

By Craig Stedman

throes of installing back-office applications such as SAP R/s are starting to look at another daunting task: tying the business software to the devices that run their plants. For companies such as Dow

Corning Corp., shuttling data among process control systems and corporate applications is critical to everything from plant maintenance to production scheduling and to guaranteeing product deliveries to customers

But standardized interfaces are in their infancy, and users who don't want to build their own links are being forced to manually enter shop-floor data into their applications.

\*Our manufacturing scheduling people now spend about 40% of their time just moving data around imanually) and not scheduling," said Charles Lacefield, chief information officer at Dow Corning in Midland, Mich. The \$2.6 billion maker of silicons and other materials is about two-thirds of the way through a global rollout of SAP AG's R/3 applications. A pair of R/3 interfaces developed by atories control window an being piloted at Dow Corning.

but Lacefield said it still isn't clear whether the automated

links can get the job done. For one thing, the comp to plants harbor a mix of different process control systems said Lacefield, who spoke in Boston last week at a manufacturing and automation confer ence put on by AMR Research Inc. Winnowing down the "hisyous amount of data" captured by Dow Corning's shop floor devices is also a devilish task, Lacefield added. "You have to pick and choose what you pass up the chain because you can kill your business system

with data it just doesn't need."



Vendors aren't ignoring the problem. SAP has built a process-oriented data interface into R/s. Makers of process control systems, such as The Foxboro Co. in Foxboro, Mass. also are seeking a fix.

But hardly any process man efacturers have gone beyond the test stage with automated interfaces, said Bill Swanton an analyst at Boston-based

AMR Minerals Technology, Inc., a New York-based company that mines and processes limestone began to use Marcam Solutione Inc.'s applications at one of its plants late last month. Getting wrate measurements and other process data into the soft ware is a must, said Keith

Hanchett, information technology director at the company. But Marcam, in Newton Mass, doesn't offer any standard interfaces yet, and Hanchett said writing a custom link is too big of a project at

this point. For now, workers at Minerals Technology will have to manually enter shop-floor statistics into a spreadsheet-based 'electronic clipboard," Hanchett said, O

Senate: Transportation in Y2K trouble only conclude that those who

By Patrick Thibodeou WASHINGTON

THE R. S. SERVE has discovered what many companies already know about year 2000 readiness surveys: They often end up in the trash bin.

That's what the Special Senate Committee on the Year anno found out last week in its attempt to measure the millennium bug's potential impact on the nation's transportation industries. Despite more than 100 follow-up phone calls by con gressional staffers to 32 of the largest transportation compa-mes, only 16 firms responded to the survey.

But the survey results were enough to alarm the committee arman, Sen. Bob Bennett (R-Utahi, who warned of "significast interruptions" in planes. trains, transit authorities and shipping services as a result of

Only a third of the companies responding to the survey have completed year 2000 assess- problem or are embarrassed ments - 'a task that should over their lack of progress,"

erally reported poor response

have been finashed over a year ago," Bennett said, Moreov only half of the firms had begun contingency planning to keep operating in the event of year 2000 problems. Bennett clearly wasn't pleased

with the Senate survey. "I can

to suppliers and vendors, because of litigation fears. "I think it's a little scary that people are not responding," even when the Senate is doing the asking, said Charles Feld, CIO at Delta Air with the lack of cooperation Lines, Inc. in Atlanta.

But the Senate is doing better

than most. Schneider National, Inc., a major trucking compo with \$2.7 billion in revenue last year, sent out year 2000 queries to 917 trucking firms it works with. Only ary reconded. "We intend to follow up again," said Christopher B. Lofgren, chief technology officer.

## Loferen said the Senate should

ficers from the adopt safe-harbor legislation that would provide legal protectraosportation industry aptions to companies that share peared at the year 2000 information. \*I think searing volum that is the most important thing tarily to testify that can come out of these hearabout their In the Senate committee's

ects. They gensurvey, which provided anony mity to the companies, almost all of the responding companies said they expect to finish their work on time. The com mittee's staff report called that 'overoptimistic, given that most of them have not yet completed the process of fully ng the scope of the YaK 66 When it comes to production printing, anyone can make promises. Keeping them is what counts. THE DOLUMENT COMPANY



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## Novell deal delivers Microsoft browser

By Laura Di Dio

SOME MIGHT CALL IT Sleeping with the enemy, but to Novell, Inc. and some of its users, it is just good business sense. That's how Chris Stone, senior vice president of strategy and corporate de-

valuement at Novell, characterized the Provo. Utah-based company's agreement last week to license and distribute all current versions of rival Microsoft Corp.'s Internet Explorer World Wide Web beowser with Novell products. "There's a 90% overlap in Novell's

haves. This type of inclusive functionality is something our customers wanted .choices," Stone said, "It's an indication that we can work with Microsoft." Stone was referring to the fact that Novell also will continue to bundle Netscape Com-

mumications Corp.'s Navigator and Com municator into NetWare

Four users contacted by Commuterworld said Novell's decision to bundle Internet Explorer in with NetWare, Novell Directory Services and Zenworks doesn't impact them from a practical standpoint because they already have Internet Explorer A o installed. Rather, the users said, they

are most cheered about the significance of the announcement, "It sound: like the boys

feel good about eich other and bury the hatch et someplace other than in each other's backs. It is good business sense. Novell and Microsoft

can't keep wag ing war like they have been. since it's only the users that get hurt," said Matt Rice, vice president and

are getting to

semior network ager at USTrust Bank in Cambridge Mass

Rodolphe Jabbour, integration and test lab manager at GMAC Corp. in Detroit agreed. He said he hopes the part signi fies a warming trend in the formerly frigid relations between Novell and Mi crosoft 'that will extend to other prod ucts as well."

"We have both Novell and Microsoft on our servers and desktops," Jabbour said. "The rivalry has made life tough on us. There's been lots of finger-pointing when problems arose. And we've had to avoid having our full-time Microsoft and Novell on-site consultants present at the same staff meetings because we could feel the heat."

The deal calls for Microsoft's Internet Explorer to be made available to all Net-Ware customers as part of a regularly up dated client CD-ROM, Additionally, the Microsoft Web browser will ship with fia ture versions of Novell products. Because the technology deal was inked just last week. Stone said Internet Explorer 4.0

won't be included in the initial shipment of NetWare c.o. which began shippens last week, nearly two weeks ahead of schedule. "We are moving fast, though, to include Internet Explorer 4.0 in the NetWare 5.0 hox in the near future."

Stone said the pact with Microsoft won't impact Novell's arrangement with Netscape, whose Navigator Web brown has been incorporated into NetWare for about a wran

\*Users will be able to download either or both Netscape Navigator and Netscape Communicator or Internet Explorer 4.0 from NetWare 5.0," Stone said. Both browsers will interface with the Netscape FastTrack Web server, which is included with NetWare 5.0.

## How OneWorld helped Pericom put its finger on the pulse of supply chain management.

How does a leader in high-speed circuits. Operations, "We wanted a partner that's "Now customers get delivery quotes on line give customer satisfaction a jolt? Pericom going to be there for the long haul, one and we can easily quote the status of any order." Semiconductor Corporation does it by automating their supply chain, from manufacturing through distribution sed J.D.Edwards. back office fmancials. With OneWorld enterprise software from 1.D.Edwards.

that's going to be an A-team, top-tier player. We're very pleased with having chosen Since the implementation of OneWorld, ought to be. It can be for you, too. To find

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### FRANKLY SPEAKING Roll your own interface FRANK HAYES

APIs to your core business Federal Express Corp. just delivered its

answer to that question. Last week, FedEx unveiled a set of application pro ming interfaces (APIs) designed to let corporate 15 shops tie

their own applications directly into FedFa's billing and tracking The new freeware packages — ShipAPI, TrackAPI and In-

traNetShip - are all www. fodex.com/us and include documentation and sample code in C++, Visual Basic, Java and HTML FedEx claims it requires "minsmal coding" to stitch FedEx access into either a World Wide Web aste or a corporate application.

The idea is simple: Cut out some of the clenical labor associated with shinping, billing and tracking packages -

automate the whole shebang and tie s into existing corporate systems - and shipping becomes faster, easier and cheaper, all thanks to the smiling folks in the purple and orange tracks

Sound too good to be true? Of course it is. FedEx isn't doing this out of the goodness of its corporate heart. FedEx wants shipping customers to use FedEx instead of UPS or DHL Stitching FedEx APIs

#### If it works, FedEx will break the software vendors' monopoly on APIs.

omers' systems is a great way to sew up their business. Still, that doesn't change the fact that customers can save money if a clerk doesn't have to manually process shur ping information. And UPS, DHL and

even the U.S. Postal Service can match FedEx API for API. Any advantage FedEx gets from this stuff will only last until its competitors match its bid But here's my favorite part of this

gambit: If it works, and customers really start using these interfaces. FedEx will finally have broken the software vendors' monopoly on APIs. Software vendors love APIs, Microsoft IBM SAP, Baan - the bigger the operatin system, enterprise package or other gargantuan chunk of code, the more overblown and complicated the APIs. Your developers are lucky if they've mastered even a fraction of the APIs in

Windows or R/3. Meanwhile, the big chunks of code you'd really like access to - your supphers' and customers' business systems - don't have any clean, well-defined APIs, do

they? And neither do Well, they should And there's good reason you should start

developing your own APIs for your business partners to use For one thing, carefully designed APIs will be a lot sturdier and safer than ad-hoc Web interfaces or whatev kludges you've used to link to your part ners' systems - if you've dared to do

that at all. Standard interfaces are easier for you to maintain and for your partners to code to. Best of all, you decide the shape of each transaction - the data to be used, the business rules to follow - since you've defined the API The downside? A lot more responsi bility for you - including some potential legal liability. Offering up your own programming interfaces means you have to figure out what kind of encryp

tion to use, how to authenticate users and how to set up secure connections Your code and documentation must be high quality - your business partners will rip you to shreds if it's shoddy If your systems go down, your business

sers — and your comp will know about it instantly And you'll have to convince your business partners that you won't feed them had data or poison their systems with unfixed year 2000 prob

But if you aren't afraid of the chal lenge, now's the time to grab control of your APIs. Because, just like FedEx, if you offer clean, well-destined interfaces to your business partners, you'll make it faster and easier for them to do business with you - on your terms. D

Hayes is Computerworld's staff columnist. His Internet address is frank haves (thousann)

#### Starr report drives Web traffic

he Internet braced for a Web surfing toursami Friday, when Special Prosecutor Remeth Start's 450-plus page report was posted on the Internet. Even before that re-port appeared on the World Wide Web, some of the ving trouble coping with the flood of people checknaving invulse coping with the Stood of people check-ing in. The crush of interest in the Starr report, expec-ed to feature details of President Clinton's relationship with White House intert Monics Lewinsky, was ex-pected to be one of the biggest avents driving con-sumers cents the Web in interest history.

#### Agencies get a 'D' grade

d agencies are making progress on the year 2000 m, but not fast enough, according to the latest rly report card issued by U.S. Rep. Stephen Horn (B-Calif.), chairman of a House subcommittee on g eroment technology. Horn gave agencies on over grade of D, on improvement compared with the pretee an gov grade of D, an improvement compared with the previ-ous grade of F. But he said he werries that more than one-third of the government

#### 47,642 passwords stolen

ity experts at the Computer Emergency R on (CERT) Coordination Center at Carnegie Meli-niversity in Pittsburgh last week said that a hack ed a computer in the University of California at haloy's mathematics department to grab 47,642 PC smooths worldwide. CERT said the unidentified backused a program called john the Ripper. The Federal ureau of Investigation is pursuing the case, and un-urally officials have changed the compromised pur-

#### Network computing, Take 2

Trying to resurrect CEO Larry Ellison's network or puter concept, Oracle Corp. will anneunce toda its Oraclell details system, which company officia characterized as an "internet operating system instead of a database (CW, Sapt. 7). Ellison said Oraclelli is a reworking of his network computing con-cept from two years ago. He said "internet computing" will be cheaper than client/server installations and essier to manage because users will use a browser to access data and applications managed by service

#### Settlement in year 2000 suit duce Palace, Inc., a Warren, Mich-based re-

Produce Paless, nrc., a warren, neck. cash negister system over alleged year 2000 problems in recogniz-ing credit cards, has reached a \$a60,000 settlement with TEC America, linc. according to a report by Meskley Publications, publisher of a monthly year 2000 journal in King of Prussia, Pn. The Macomb County (Mich.) Circuit Court hasn't yet closed the case, and a spokeswoman for Produce Palace declined to comment an whether a settlement had been

#### Traders get high-tech option The Nasday Stock Market, Inc. in Washin

rati Nasdies Stock Market, Inc. in Washington has reached an agreement with Demings, Och-based Optilizate Technologies, Inc. to begin offering the Optilizate system to trade Nasdies stocks beginning ones timmers proming government approval. Optilizate is an eluctronic equity trading system that uses super-computers and algorithms to match stock toyens with

#### Online banking disrupted

ationsBank Corp.'s Internet and PC-banking cureers were unable to access their account inform tomers were unable to access their account informa-tion electronically during the Labor Day weakend as the Charlotte, N.C.-based bank was upgrading internal software used to support those services. Customers were, however, able to access accessed information by using a volcar response system. Nationalisth Ortho-customers were notified of the systems disruption. when they logged on to the World Wide Web sits during the Laber Day weekend, according to a bank

HORT TAKES IBM last week and dicrodrive, believed by analysts to be the world's mallest hard disk drive that fits into a PC memory Microphine, Nulsead by sudyest to be the works of the control of t



Solve Dataline Power P th APC's ProtectNet Eth





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132 Friegrounds Board, Wort Kingston, 25 62962 US

### Homer database aids security toric 6oth, 61st and 6and home

WHEN ST. LOUIS CARDINALS SINGper Mark McGwer comes to but these days, the defensive shift is

Of course, it would be futile to move outfielders and infield ers around the field, given that McGwire-has hit more home runs than singles this season. Rather, as McGware approached

a record-setting 6a home runs for a single season this month Major League Baseball (MLB) officials decided to dig into a statistical database to belo their move stadium security into

place in the stands The goal was to have enough security people in place so that when McGwee clouted his his-

runs, baseball officials could prevent a melee of fans scrambling for the historic balls and identify just who came up with them. Then, the fan could be escorted to safety and given space to quietly determine what to do with the piece of baseball

Now that McGwire has set the record, each of his home runs during the rest of this season will be a record-breaker so the security precautions will remain in place

To help figure out into which sections of seats McGwire was most likely to hit a home run. Kevin Hallingn, executive director of security and facility man aprenent for MLB, turned to

State, Inc. in Skokie, Stats can tell you that McGwire has hit 50 of his home runs against right-handed nitchers, sa in parks with natur al grass fields, 46 at night, and only four

to right field. To come up with those figures, Stats uses more than 300 reporters who watch each ball game and tally prich-by-pitch descriptions. Each reporter dials in to the commany's statis-

tical system and feeds his game log into its two databases - a System 1032 database from Computer Corporation of Amer ica and an Oracley.3 database from Oracle Corp. We could have told them what (McGwire's) tendencies

were for each pitcher and each fball and strikel count," said Marty Gilbert, Stats' chief operating officer

#### HT ABOUT HERE

Hallman didn't ask for that level of detail. Instead, after Mc Gwire's 50th homes, he used seating diagrams and statistical probabilities to map out sections of seats in Busch Stadium where the red-haired shugger's blasts would likely land. moved more security people into those sections when he was coming up to but and moved them back out when he wasn't." Hallinan said. 'And except for No. 6a (which cleared the fence

but didn't land in the seats), we were right on the money. "It was a magnificent event." Hallinan said "and McGwire to his condit was like a kid at a Lie tie League game, he was so excited.

As McGwire and Chicago Cubs slugger Sammy Sosa vie for the season's home run title and record. Hallingo has alerted National League teams to take similar security precautions For example, Mark Gugliel-

at Re/Max International, Inc. in Greenwood Village, Colo. "If you use a laptop for word processing and your calendar, it's like using a cannon to kill a fly." "The two most important things in a laptop to me are bility and the stability of the lapton and not constantly wanting to change the design. said Janet Wilson, informat

systems manager at Mutual Insurance Company of Arizona in Phoenix. She is ordering 233-MHz Dell machines and said she wants the next upgrade to fit those docking stations. Industry analyst Sam Albert. president of Sam Albert Associates in Scarsdale, N.Y., said the

could be helpful when trying to run Windows NT on a laptop. But Keo Delapey, ao analysi at Gartner Group, Inc. in San Jose, Calif., said. "There's not a driving reason to move up" to too-MHz notebooks. He recommended waiting for the 131-MHz processor next year.D

mo, director of stadium operations for the San Diego Padres. may bring m as many as 40 ad ditional officers to help control outfield grandstand crowds when Sosa arrives this week Similarly Scott lenkins vice resident of stadium operation for the Milwaukee Brewers, said extra security will be in place when both McGwire and Sour

come to town later this season.

But Jenkins laughingly said he wouldn't trust the predictive models as gospel truth.

\*Some model predicted Mc-Gwire would hit his 6and home run in Milwaukee on Sept. 18, and we thought, Boy, that would be great," Jenkins said. Then he went out and hit seven in seven games and set the record faster than anyone had predicted.\*[]

#### The new Solaris/HT intercogrability includes:

The ability to support Sun SPARC- and inter-b Solaris 2.5.1 and 2.6 systems to provide native it

The SunPCI card, a PCI bus plug-in that will en

workstations and servers to directly run Windows 9 3.11 and NT 4.0 applications. The card contains an KG-2 processor with 64M to 256M bytes of RAM

Efforts to link Sun's entire line of StorEdge netwo storage arrays and tape libraries directly to HT en

· Pricing: Not yet set

## Sun to tie Solaris to NT

By Laura Di Dio and Jaikumer Vistyan

TECHNOLOGY VENDORS, like politicians, sometimes make strange bedfellows. Sun Microsystems, Inc. may

be the only major hardware vendor to exchew the opportunity to make hardware for Mo crosoft Corp.'s Windows NT operating system. But last week, Sun bowed to user demands and said it will release a spate of products that increase interoperability between Sun Solaris workstations and servers and applications designed for Mi-

crosoft's Windows NT. Sun said it is developing sof ware technology, code-named Project Cascade, that will provide native Windows NT per vices - such as end-user authentication, file and print services as well as network di rectory services - oo top of the Solaris operating system. The idea, according to Sun, is to give Solarie users the same network services that Windows NT offers speedy 300-MHz performance in PC and server envir The technology will become

available in January or February "I'm happy to see this," said Dave Hyman, director of infor mation systems at John I. Mc Mullen & Sons, Inc., a defense contracting firm in Arlington Va. Hyman said there has been a big push from management

Unix in favor of NT. Cascade will enable users to take advantage of Unix's scalability and reliability while at the same time providing users with Windows graphical user interface and case of use, he said.

Sun is also developing a PCon-a-card hardware option that lets Sun workstation users run Windows 95/98, NT and DOS office-productivity applications - such as word processing and readsheets — oo a Unis That eliminates the need for Sun workstation users to have a separate PC on their desktone for running Windows applica tions. Pricing and availability of the SunPCI card will be an nounced by the end of the year. Also in the cards is Sun's

plan to develop software that will allow its entire range of storage servers to be attached to and managed by NT systems. The timing of the Cascade technology could benefit Sun because Windows NT 5.0 and the Active Directory have no of-

ficial release date, analysts said. O MORFOR INF

## s on Unix and NT



sfely retrieved thanks to data tracking

## Laptop speed not priority

By Matt Hamblen

THE COMMITTEE INCUSTRY last week came out with even faster luptop PCs that sport Intel Corp.'s new 300-MHz Pentium It chine designed especially for notebook PCs But corporate buyers said

what they really want is more durability and longevity from their notebooks. latel and a dozen notebook

makers building machines with the new processor said speed will jump 6% to 12%, depending on the application, over the a66-MHz Pentium II htroduced in April.

In the corporate market, the yoo-MHz processor will let notebook users play full-screen digital video disc (DVD) movies with better quality for sales and ng presentations, officials at IBM and Dell Computer

Corp. said. For example, IBM week announced four ThinkPad notebooks with the new processor, including a model with a 6 AG-byte hard drive, the Windows NT operating system and a price tag of \$3.899. Dell, in Round Rock, Texas, ao nounced the Latitude DrooXT, equipped with a AGbyte hard drive, for \$3,199.

But several users said they aren't impressed by the video playback and are more worried about practical matters, such as keeping their existing machines longer - up to three years. They want to be able to plug newer models into their existing dock-

ing stations or replace their CD ROM drives with DVD drives. "I can't imagine why I'd need more than the a66 MHz I already have; it's lightning fast," said Bruce Benham, vice presi dent of information technology

# CRISIS MANAGEMENT

(Why solve a problem when girl is and it ear the lear plan

## Migration tools a hit

Microsoft Exchange software for Notes and CC: Mail a free download

#### By Roberta Fusaro

MICROSOFT CORP. last week announced free migration and coexistence tools for Notes and CC:Mail at the third annual Microsoft Exchange Conference - homing in on a problem many attendees said they face: linking or moving from Letus

mail systems The connector and analysis tools are based on technology Microsoft gained last year when it bought The Mesa Group. Microsoft also outlined new collaboration features in the company's forthcoming Outlook acco messaging client, due with the release of Office 2000 early next year; and the next emeration of the Exchange server, code-named Platinum

But the migration tools, designed to help companies using Lotus Development Corp.'s Notes and CC:Mail. garnered the most attention - and the most applause - from the 4.500 attendees at last week's conference in Boston

Joseph Fares, MIS manager at Equity Marketing, Inc. in Reverby Hills Calif said the migration technology comes at a perfect time for his company. which just acquired Boston based CMI USI.

By Boherto Fuster

messaging servers.

WINDOWS NT 5.0 is still in beta

release, but Microsoft Exchange

users are concerned about

whether the operating system's

improved directory will work

with the directories in their

Exchange runs on NT and

has its own system directory.

But the next version of Win-

dows NT - which is in Seta a

release - also will feature the

In a session on Exchange and

the Active Directory at last

full-scale Active Directory.

They're running a Notes server, and we're running Exchange [5,5] on all our servers, Fares said. CMI spent thousands of dollars to develop Notes-specific applications, "so the idea is to let [the systems] coexist, so folks could keep us-

this money on." Fares said. "If

Directory integration

a concern for Win NT

any what they recently spent all this works, it will make life a lot casses But Mike Daniel, a systems analyst at Lona Linda Univers ty Medical Center in Lorna Lin-

da. Calif., was a bit skeptical and wondered how well the Microsoft tools would work

change users will be able to use

a connector in Active Directory

to replicate directory informa-

tion - such as addresses and

E-mail distribution lists - from

Exchange to NT and vice versa.

to the user but should improve

network performance and ease

The connector will be avail-

able in NT co and Platinum

the next generation of the Ex-

change server. Microsoft hasn't

administration, officials said.

The switch won't be apparent

The medical center is 85% done moving 4,500 CC:Mail users to Exchange, but it had some problems using Macrosoft's CC Mail connector specifically corruption of data in the CC: Mail boxes. The medical center used a work-around that involved Windows NT but Daniel said the fix reduces just the frequency of the problems.

The CC:Mail Importer announced last week moves

archived files to Exchange, al lowing users to preserve business-cetical information in their personal E-mail folders. The Notes migration tools in-

provided ship dates. Mark Harris, a systems eng-

neer at the Washington law firm Howrey and Simon, said the directory integration issue is critical to the firm's 1,000-plus Exchange 5.5 users spread out in offices in Washington, Los ference in Boston Microsoft Angeles and Menio Park Calif Corp. officials said current Ex

"If there is no integration [Exchange and NT 5.0] must be managed separately. That's not necessarily evil, but it does reoutre two totally distinct, almost unrelated administrative functions," Harris said.

REASON TO MOVE

Marrie raid the Action Disectors connectors and options will let the law firm provide closer ties between Exchange and Windows NT 5.0. His firm will be looking at that as a reason to

chade an application analyzer which categorizes Notes data bases based on usage and types of applications and provides a snapshot of what will be converted to Exchange; a connector to link Notes and Exchange environments; a conversion assistant to convert all or part of Notes applications to Exchange:

and an importer that moves Notes mailboxes to Exchange The tools can be down for free at Microsoft's Web site. The analyzer is available from resellers because of the complexity of the reports generated. Microsoft officials said. O

#### we to NT v.o. Harris said. But other users said the grad ucts will prove themselves only

after they start shipping. Freder ick Klein, an information technology manager at GTE Corp.'s Government Systems divis based in Chantilly, Va., said he wondered how relevant all the advance information was, given that the products themsel probably won't be available for about a year.

Mike Daniel, a systems ana lyst at Loma Linda University Medical Center in Loma Linda. Calif., agreed. "I was hearing about Platinum (and Windows NT] in the keynote [speech] last year, and they're still talking about it." he said. "It's all poor stuff coming, but [that] doesn't help us with the day-to-day problems we're dealing with."

## Consultants' travel costs

CONTINUED FROM PAGE 1

#### costs," he issid Hafer isn't alone. As consul-

tant travel expenses continue to climb, to as much as one-fourth of total information technology project costs, more users are januming the brakes on runaway consultant expenses

"We are seeing systems intogrator proposals where travel expenses are being budgeted at 20% to 25% of fees, which is many times the cost of the software," said Vinnie Mirchandani, an analyst at Gartner Group. Inc. in Stamford, Conn.

Some users are responding by setting strict caps on consultants' lodeine and meal costs. Mirchandani recommends capping travel costs at 10% of the usulting firm's bill, which of ten works out to about \$150 per day per consultant.

Others are negotiating so-called all-in-one deals, which

lump consultants' travel and other living expenses into the overall project price. That shifts the burden of policing costs from project managers to the consultants themselves At Mycogen Feeds, a Min

eapolis-based division of Dow Agrisciences Corp., the 11 consultants from Clarkston-Potomac working on the company's SAP AG R/3 project must pay for their own meals. adtants' other expenses, including travel and lodging.

are capped at \$1,250 per week. And it is up to the Durham N.C.-based consultancy - not the client - to ensure that consultaots stay within their

budget, said Christine Myers. Mycogen's SAP implementation manager. So far, off-loading the budget responsibility has paid off. The first month on the job, Clarkston Potentiac's consul-

tants spent 20% less than what was budgeted for travel. T've never before worked with a consulting company that has been so involved

with making sure they stay under budget," Myers Sterling Diagn tics Imaging, Inc. in Greeoville, S.C.

has been able to keep consultant travel costs down to 10% of overall SAF project costs by doing exactly the on-

SAP project manager Christipe Vincent is very much involved in planning consultants' work, always looking for ways to nimize their travel and, in

turn. Sterling's own costs. Ster ling also limits consultants to hotel expenses of \$70 to \$120 per night and food expenses of \$10 to \$20 per meal. To cut down even more on

consultant travel costs. Gartner Group said, users should con sides moving a part of their IT work - such as data conversion

and software con figurations consultant develop ment centers Via tually all of the five Six and many of the boutique con

R/3 consultants must be responsible for budgeting Christine Myers, Mycogen

> sultancies have set up such centers as a means of speeding up projects and attracting experienced but travel-wears

Ernst & Young LLP, for example, has 18 centers and plans six more. Chicago-based Grant Thornton is taking a regional approach, locating its consultants in about As cities across

And last week, Plaut Consult-ing in Waltham, Mass. launched ao off-site, rapid imwill cut as much as two months from a SAP project that would take six months with consultants working at the client's site Because the consultants travel less, project costs also will drop

by as much as 10%, said Larry erlov, project manager for the new off-site program But back in Tampo, Hafer has

what he said is an even better idea - hire locally. "When you hire a local, it's a

win win "situation," he said. The consultants are happy be-cause they're home. And the user tends to get more productive time out of them beca they don't cut out early up. Pri day to catch a flight back. You get more work out of them."

# Trend Micro and Sun deliver integrated

## Anti-( Spam Virus ) for the Internet Age.

Here's why Sun Microsystems and other leading internet companies are working with Trend Micro's virus protection technology for their extensions:

Trend InterScan VirusWall' delivers comprehensive virus protection for traffic passing through Sun's Notro i servers, providing scalable, enterprise-class security at the Internet gateway.

Trend provides integrated border security with leading firewalls

Trend blocks spam and enables content filtering

Trend detects known and unknown malicious appliets

Trend Virus Control System (Trend VCS\*) provides web-based central manager Trend products one directory-enabled for easy infrastructure integration

Trend uses COM/DCOM architecture for ultimate scalability

livend integrates directly with Internet-ready groupware livend support is global, internet-enabled, and real time To learn more about how Trend InterScan VirusWall works with

Sun Hetro i servers to deliver superior getoway virus protection, visit http://www.antivirus.com/netro.htm Or call 1-877-TREND AV (873-6328).





## Web aids Swissair response

#### Airline coordinates reaction via 'net after crash

Br Sharon Marklin

AT 5:50 A.M. Sept. J. Andy Guenthard got the call that every airline employee dreads: One of the company's planes

had gone down. Within to minutes. Guenthard, manager of electronic-

merce at Swissaur, and half of his eightmember team already were at so the

Zurich-hased airline could use the Internet to belo CODE

with the tracedy's aftermath \*Everybody is under comple stress," Guenthard said, "Whatever technology is there. let's use it." By 7 a.m., the team had up

dated the company's home page on the World Wide Web with information about Flight 111 as it became available. Soon, E-mail messages began to come in from frantic relatives and friends who thought they had loved ones on the downed New York-to-Geneva iet.

We tried to respond to every E-mail we received within three minutes," Guenthard said. Mecsages were turned over to the airline's special crisis care team.

For any E-mail that included a phone number, a Swissair spe cialist telephoned the family member or freed immediately. Guenthard said

The passenger list couldn't be released until airline officials were completely sure of its accuracy and, because of U.S. law,

families of all U.S. passen pers onboard were notified Once the list was made pub-

lic, it was posted on Swissair Web

To deal with the international crush of media seeking information about the crash. Swis sair officials told reporters that all public statements and press releases would be assilable on the Web site.

CERN FOR FAMILIES "The Web did help a lot," said Hans Klaus, a Swissair spokesman in the airline's public rela-

tions department. Swissair generally has recrived high marks for the way it has responded to the tragedy namely by trying to care for victime' families and calence infor-

When you have a crisis

ery system, every person every operation you have is put under enormous stress. In most cases, organizations do not react well," said Robert Dilenschneider, a crisis management consultant at Dilenschneider Group in New York. "Swissair has done a terrific job. It's a model of how a crists ought to

be handled " Putting information on the Internet is one example of how the company is properly communicating with victims' fami-

lies, the media and the public at large, he said. By 7:10 a.m. Swiss to when news of the accident first

bit national TV and radio news programs, traffic to the Web site spared. Swissaur contacted its Internet service provider, saying it would need extra bandwidth and shut down all unnecessary resource designs - even soft ware that logs site traffic - to cope with the flood of users.

The revamped www.swissni com site was treated as a news service, with regular updates. The uniform measure locates brought up a text-only opening age about the accident with a nk to the airline's regular site. "It's very fast to put news up there." Guenthard said. "We didn't want to make a multi-

edge in Peggy's Cove, Nova Scot

About 1,500 messages poured in the first day it was up; there wore 4.500 or so late last week

sengers. Switzger started to receive hundreds of E-mail messages that simply expressed sorrow shout the tragedy. The day after the crash, the electron merce group added a condolence book for people to them and fellow airline employ-"This is the best feature we ees an outlet for their own could think of." Guenthard said, grief.C

Victims' families can see all the messages, and any E-mail that mentions a specific passen ger or crew member is sent to that person's survivors. The electronic-commerce team also sees the messages, which gives

#### IT managers batten down the high-tech hatches By Stewart Deck ing, you don't know when net-

IT'S HURBICANE SEASON Again. and as the winds begin to hewl. information technology directors are making sure their emergency wet-weather plans are fied securely Ed Griffin, IT manager at

Blumenthal Mills, Inc. in Marion, S.C., thought he had his 600-employee textile manu turing firm well-prepared for the wrath of Hurricane Bon

Blumenthal Mills uses Munice software from Lakeview Technology, Inc. in Oak Brook, Ill. to create a duplicate image of its IBM AS/400-based systems on other A5/400s in a New Orleans branch office. That redundant system can then direct the company's manufacturing plants, which produce 1.800 rolls of mattress ticking and upholstery each day.



The backup system work during Hurricane Bonnie, but local power surges nevertheless nut mertame on the faits. The power was off and on so many times for two days that it over er supplies) and caused some system failures," Griffin sighed.

A disaster contingency plan should try to cover all possible failure scenarios, said Moshe Roznitsky, professional services director at Total Network Solutions, Inc., a New York-based consultancy. And testing the plans at least once per quarter is vital. "If you don't keep test-

work changes will require a change in the plan," he said. When Ed Clark joined Hatteras Hammocks, Inc. as MIS manager this spring, he was surprised to discover that the company didn't have a disaster ngency plan, even though the Greenville, N.C.-based man facturer is smack in the middle of the outh of many hurricanes. Clark quickly went to work, and when Hurricane Bonnie kicked off this year's burricame season, he was read-

media spectacle out of it, that

Along with queries about pas

wouldn't be appropriate."

write messages of sympathy

Clark runs a daily system backup and copies a full system backup onto 8mm tape which he takes home - when one of the big summer storms heads toward North Carolina. He also contracted with Sun Gard Recovery Services, Inc. in Wayne, Pa., to provide replaceoperate the company's computer system in case of a natural

\*Our company president said we might be able to exist for two days without our computer system. So selling him on the idea of an emergency plan wasn't too difficult." Clark said Rick Tanner has found a high-tech assistant to help him monitor storms. The acting director of disaster recovery st Northern Telecom Ltd 's riobal data center in Research Triangle Park, N.C., relies on hourly E-mail updates from a storn

tracking site on the World Wide Web (www.stormo8.com), When big storms head his way. Tanney calls for a tanker truck filled with diesel fuel to park nearby, ready to fuel power generators for the 4T-byte data center. "We lost power for six days during Hurricane Fran two years ago." Tanner recalled. 'So now we think having the truck come is a cost-effective way to make sure we stay running." ()



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## Supplier seeks sales via Web searches

· Efficient product queries goal of partnership

By Sharon Machins W. W. GRAINGER, INC. Which sells maintenance and repair equipment, plans a major overhaul of its Internet

based catalog operations to make it easier for customers to find what they're looking

ful search engines have long been a complaint of consumers surfing the World Wide Web. But for Grainger, helping corporate

customers pinpoint the parts they need is a linchpin of its Sa billion-per-year business. There's nothing special

about our products. You can get them anywhere," said Don Brelinski, group president at the Lincolnshire. III. company. "Where we help is in the busi-

Requisite Technology will electronically catalog Grainger's products and develop relevant

search questions for the site. ness process.\* That means carrying a broad array of products - everything from lighting to motors to security products, for one-stop shopping - and mak-

power and revolutions per ing it quick and easy to order. Speed has become a kes Grainger has entered into a

value-added moredient, he said. If a Grainger customer needs, say, a replacement motor for an air compressor, the buyer will typically leaf through the company's thick red paper catalog that lists 70,000 products and

search for the appropriate motor - often calling a sales assistant for help before ordering. On the Web, a customer might enter 'motor' and then

still have to wade through dozens of listings. The new site, expected to go live next month or in Novem ber, will come back with a series of questions once a user enter a product type. For motors, that might mean queries about brand name, enclosure, horse-

which Requisite is to electronically catalog Granger's products and develop relevant search questions.

By Tom Diederich SAN FRANCISCO

"multiwar multimillion-dollar

deal with Requisite Technology

Large numbers of technol vendors are jumping into the electronic procurement market, said Geri Spieler, an analyst at

Gartner Group, Inc. in San Jose.

Though the deal with Grainger should help Requisite get noticed amid the market noise, Spieler said, she is less certain how much it will belo Inc., based in Boulder, Colo., in Grainger grow or retain its bus ness. "We need to see in six months if Grainger customers have implemented this," she

> Web sales account for less than 1% of Grainger's business, but are "the fastest growing thing we have," Bielinski said. O

## CORBA 3.0 promises plug-and-play ease

> Support for Component Model a key feature

## Funding begins for Internet domain group

Dr Matt Hamblen

A CONSORTIUM of 13 cor with sizeable stakes in the future of the Internet has begunraising \$100,000 to support a new nonprofit organization for iging domain names and IP addresses worldwide. The Clinton administr issued a white paper in June

recommending the nonprofit to take over the government's domain-name role. The report doesn't prescribe funding, but sets up guidelines and recommends a nonprofit

up be formed. That's because the government will terminate its contract current domain-name provider Network Solutions, Inc. (NSI) in Herndon, Va., on

Three companies in the consortium, called the Global Internet Project (GIP), and two other companies outside it have contributed \$135,000 to the fund so far, GIP officials said

Gifts are capped at \$50,000 The three GIP members who contributed are IBM, MCI Com-

munications Corp. and GTE ternetworking. Ascend Communications Corp. and Cisco Systems. Inc. are helping from the outside, GIP officials said.

All five gave roughly equal amounts, Vinton Cerf, senior



MCI's Vinton Cerf says there seems to be a wo sensus for creating a nonprofit internet address manager, but there is still concern over how to run the entity

vice president of Internet architecture at MCI in Washington. told reporters. The fundanc is important, given the government's Sept. 30 expiration date for the NSI contract, Cerf said. Cerf and John Patrick, vice ent for Internet technolo-

gy at IBM and chairman of GIP, said there seems to be a worldwide consensus for creating a nonprofit manager, but there is concern on how to constitute a board to run the entity.

The Internet Assigned Num-ers Authority, which manages the numbers used in IP addresses under government aued a nonprofit board of nine to

19 members, to include a broad range of representatives. The lengthy proposal is post-

ed at ware inne.org. B. K. Delong, director of the New England Chapter of the World Organization of Webmas-ters in Boston, welcomed the fund-raising drive, saying the nprofit will need start-up

The companies raising the money have a \*big stake in the Internet," Delong said. "But I suldn't say there's any danger afoot in their making contribu tions as long as the nonprofit ard eventually has edu al or nonprofit members, as

THE UPCOMING Version to specifications for the Com Object Request Broker Architecture (CORBA), the translator that lets different applications communicate with one another. "Over the last 20 years, we've

have users looking forward to a plug-and-play application devel-opment world. The goal of CORBA 3.0, its backers said, is to make the application development standa

eatier to use in a distributed The Object Management Group (OMG), the organization of 800 member companies that administers the CORBA specification, plans to publish details

of Version 2.0 in the first half of next year OMG veiled the latest The goal of CORBA CORBA initiative last week at Coendex Enterprise 'q8. Faccutives from IBM, In-

Dublinbased Iona Technologies Inc. and BEA Systems, Inc. in San Jose, Calif., among others, said they would release future pr ucts that will support CORBA

prise Corp. in

Calif

The new specification's key ons include integration of Internet and Java technologies and support for the Compos - a cross-la cross-platform model that specifies a framework for plug-a

play software objects. Kent Wreder, corporate direc tor of object technology at Bap tist Health Systems of South Florida — a Miami-based emuo of five hospitals - said COREA 3.0 will serve an integral role in day-to-day operations.

> accumulated about 150 systems that each hold a fragment of the nations second — he is an ion age, a transcribed report, lab data or nurses' notes," Wreder

CRUCIAL TO USERS

In 1996, Baptist Health Sys tems turned to CORBA as a way to connect those systems "As we move forward, 3.0 is very important to us because we want to be able to send clinical information (to one of the

a.ooo member physicians) that's relevant" to patient's preda Wreder said.

"We see the combination of components and Jother features) as the mechanism for us to do that, since the applications then

are already CORBA-based and online," he added. OMG Chairman and CEO

Richard Mark Soley said application vendors need to standardize the way they implement nponent-based software so that users' applications 'will be portable from one CORBA immentation to another. That's what CORBA 3.0 is aimed LAST YEAR, AMERICAN COMPANIES SPENT \$320 BILLION ON INFORMATION TECHNOLOGY AND INCREASED PRODUCTIVITY BY 1.4%.



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## Generation X: Skills training trumps pay

By Bark Cole-Gomolski

MAPTY SALARIES and bosuses are great, but information systems departments should plan to spend big on training if they want to attract and retain Generation X workers. A survey by The Gallup Organization in Princeton, N.J., released last week showed that training is a major draw for employees born between 1963 and 1977. In fact, Gen Xers said they are more likely to stay with companies that investin such programs.

The old mentality of corporate loyally is archaic to Generation N., 'said Steve Berman, president of Paladin. Inc., a Cherry Hill, N.J., consultancy that specializes in retention. [Gen Xers] expect to change jobs every two years, so they don't expect to work their way up the

corporate ladder," he said. Instead, they look at jobs as opportunities to acquire hot skills for their move to the next

opportunity, Berman said.
That is especially true in the 1S field, where workers with the hottest skills — in areas such as enterprise resource planning, knowledge management, data mining and technologies related to the World Wide Web — are increasingly sought affer.

Jada Brock, 29, an information technology consultant at Cereus Bandwidth in Atlanta, agreed that training is key for younger workers. "You have a better edge in the marketplace if you get training in hot skills," she said.

TRAIN ME
A nor Gallay poli supports employers most lessed in training in retain surface, core

event in training to retain workers agos 21 to 35. Of those polled:

84% who got at least six days of training were satisfied with their jobs

80% said training was a factor in accepting new jobs.

58% said training was useful if preparing for higher-leve

Base: USI2 employees in U.S. companies

Gen Xers' focus on acquiring skills comes across load and clear, according to Al loars, manager of college revueling a learning of college revueltion information schoology on unitary, in Baifas V. They tell you that they are interested in learning new things that will help them in their career down the cod," he said.

road," he said.

To some staffing managers, that looks like a no-win situation because they have to invest in training only to see Gen X workers woord away by competitors.

But it doesn't have to be that way, according to Bruce Tulgan, author of Masaging Generation X and president of Rainmaker Thinking, Inc., a consultancy in New Haven, Com. "Since Gen Xers value training, the training should never end. Tulgan said, He encourages companies to put IS recruits through a boot camp that may take a few weeks, then

offer them training on a real-time basis. One of Tulgas's clients, Debotte & Touch Consulting, lets workers glean insight from experts in the firm using a knowledge base stored in its Lotus Notes system. The important thing is to give them the training when they need it and not make them wait smill next month or even next work. Tulgan said.

The Gallup poll showed that workers see room for improvement in the quality of the training they get; only half of the respondents gave their training high marks. The survey showed that employees want a choice in the training they receive: 27% want training in more technology; 75% in job skills; 16% in communication; skills; and 14% in



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Information

Uniting the Web and the Enterprise

#### Sending a message the protein proc ings of U.S. vs. Microsoft have yielded a tantalizing bit of corporate intrigue: E-mail snippets from Microsoft and Netscape that have been released by both narries in the case.

The documents show executives conspiring to smililiste one another with all the vindictive glee of to-year-olds in a school yard. This corporate urism has been fascinating, but it should send a chill down your spine if you are responsible for administering E-mail. You may want to route copies of these messages to users with a Post-it note asking, "Could this be you some day?"

E-mail has become part of the fabric of many corporations. At companies such as Microsoft and Netscapa, it's an essential part of the culture. But as users get comfortable with zapping gossip, com-



petitive intelligence and dirty lokes among their computers, it's easy to forget the unique power of

Messages sent on E-mail don't evaporate like chitchat in the cafeteria. E-mail

is a traceable, searchable, archival, self-documenting medium for exchanging documents. As the Microsoft discovery process shows, the E-mail note you send today may turn up in a personnel file or court procooking some day.

A couple of years ago, I adopted a philosophy of ing that every E-mail I send outside the compam could eventually wind up in print, in a newsproup or on somebody's Web site. The practice has served me well - especially when some of the more vitriolic E-mail I get entices me to respond in kind

But I wish I could say the same for my elect musings within the walls of the company. Unfortunately, I am as guilty as anyone of letting rumor, anger and success occasionally creep into messages to my colleagues. The Microsoft case has given me pause to reconsider. You might reconsider, too. If the judge in the antitrust case allows E-mail to become an essential part of the proceedings — and that's still a big if - it should spur every corporate E-mail administrator to revisit company policies. The department watercooler is going electronic, and with that comes a host of accountability issu





35 years of serious music study

and at years as a programmer

However, the writer and the inter-

"structured environ ments\*), while the

al loops, go-to's and subroutines.

fill programming vacancies is no

new A fairly famous urban legend

is that, during the 1950s, with the

data processing and computer sci-

connection and recruited mus

AS/400 is nothing if not a data

base machine. It is the only one I

know of that has a relational data

base (and a very good one -

DBa/400) integrated into the op-

erating system, not a separate

True, it is possible to design and

Michael Poliste

Senior programmer/analyst

Circuit City Stores, Inc.

minolutto-ibani com

implement a bad system. But this

is misleading, at best.

portments.

The idea of hiring musicians to

find the correlation

('puttern recognition,'

reasoning skills" and

painfully obvious was

overlooked: Musical no

tation is a programming

language. It even has

provisions for condition

#### Musical abilities dance to the programming beat quite well Survey-free zone saves time

NAME YOU for your article on T\*Crazy correlations\* [CW. July and to my "past life" I was a balldancer People always thought it was the furniest and viewes seemed to be grasping to most unlikely thing in the world when I fell

in love with programming and database administration. Using metaphora from a past career is crucial to me. Seeing a whole dance routine as a final production and

seeing a client/server database auon in its entirety don't seem very different at all to me. I always enjoy your magazis and start hunting down the mailman if it's even a day late Danielle E. Chard

IT professional, consultant Naples, Fla. dchard@naples.net

rouno Computerworld's story musicianship and programming aptitude ["Crazy correlations," CW,

#### AS/400 relational database capabilities maligned

publishing an article lauding what I believe is the best business ter in the market: IBM's ASIAOD I'ASIAOO keens chueging," CW, July 11. Yet in the same issue is an

article [\*Payment system saves builder's time") that states that the company mentioned "was being held back by its computer system - an AS/400 that stored financial information in unconnected files rather than a database." I challenge that statement as ismorance. The

#### A BOUT TWO YEARS ago, as an IS July 20] very intriguing, given my

nanager, I created a department policy that we do not take part in surveys. (I make an exception for periodicals that I subscribe to.) I have saved yo hours of time In the vein of executive editor Maryfran Johnson's column ("Sur vev stupor." CW. July 201, would you say you save up to one hour per month, one to two hours per mooth, etc., by not taking part in surveys? Just say no to surveys!

Skye Hagen Court D'Alexe, Idoho

## Did someone say Microsoft?

ICROSOFT IS to computer software what McDonald's is to food. Few people will admit to liking the taste of McDonald's food. oring instead to defend it on functional grounds (quick, cheap, etc.). Many people, including many in the government, decry McDon ald's food as an evil (unhealthy high in fat and cholesterol, etc.) But everybody buys McDonald's food, and if it disappeared tomor row, we would all miss it terrible

ments from its readers rds and should be ad-seed to Maryfran John we Editor, Compu rid, PO Box 9171, 500 Old ticut Path, Framing-Mass. 01701. Fax nu per: (508) 875-8931; Internet: ters@cscom. Please in-ide an address and phone

ence programs not yet invented at most schools. IBM quickly identified the musician/programmer majors to fill its programming de-Mile Marie St. Louis mcm@directory.talx.com

Tony Hohenbrini Cape Town

### Year 2000 is the tip of a menacing iceberg William Ulrich

he year 2000 problem is exposing an ugly side of large organizations. Many blame IT for moving slowly to address the year 2000 challenge also suffer compliance problems. Yet and for underestimating the overall scope of the effort.

But when IT went to executives for funding, they were stonewalled. That stonewalling on the funding issue is just one example of the business com-

leveraging IT. Business units remain stuck in newtral in dealing with the year 2000 problem while rema ing blind to the greater dangers and

ahead. From a tactical perspective, businesspeople haven't effectively addressed their end of the year aooo problem. While IT has corralled the bulk of its systems assets into workable inventories business teams are just coming to grips with supply-chain and non-IT systems challenges. The number of suppliers and business partners can reach into the tens

Businesspeople haven't effectively addressed one compet on the problem.

> of thousands, but users have little estanding of the relative priority - or even the existence - of many of them. Considering that executives have stated that suppliers are an unknown risk in Securities and Exchange Commission (SEC) 10K fil-

ings, it seems that issue would be a top priority. Addressing year 2000 problems in non-IT systems is another area where business units have beered Distributed systems, spreadsheets and ogue technologies have proliferated out side the purview of IT and audit teams. Asset mismanagement and poor preporation by users mean those systems will

likely encounter many year 2000 failures. Embedded technologies - common in devices ranging from security systems to automated assembly lines business managers responsible for those systems are still in the early stages of

> dering replacement parts. While tactical husiness unit preparations for the year 2000 lag, senior executives pursue strategies that make a bad situation worse. Initially, year appo funding

requests were denied That slowed project mobilization. Recently, IT has been trying to obtain funding for business continuity or contingency planning. Executives were slow to sponsor and fund the creation of contin-

gency plans until SEC filing requirements demanded it. Corporate directors also continue to defy logic by pursuing merger-andacquisition activities despite knowing that the year 2000 problem is far from

Earlier this year, Citicorp and Travelers merged to create a year 2000 project with a combined budget of \$875 million. But was year appo considered during

boardroom discussions leading to the merger? We may find out, if a year 2000 problem leads to a class-action claim

against the newly created company Other organizations are also launching business initiatives, including the euro conversion, in spite of the fact that year building inventories and or-2000 projects require many of those

> Denying critical funding, ignoring the consequences of asset mismanagen and not considering technology issues when making strategic business deci-sions have all magnified the year 2000 problem. IT must clean up its act and has taken steps in that direction.

But IT issues are insignificant compared with the more far-reaching issue of failing to comprehend the strategic impact of IT on a company We will survive year acco, but it is

only the beginning of a rocky ride if nesses don't clean up their acts. () Ulrich is president of Tactical Strategy Group. Inc. and executive vice president of Triaxrys Research LLP. He is co-author of

The Year 2000 Software Crists: Challenge of the Century and The Year 2000 Software Crisis: The Continuing Challenge. His Internet address is tanincillicruzio.com.

## Who will answer the private doorbell? Emily Frye

You know how difficult it can be to protect information once it's in digital form. That's why encryption is an essential tool for busi-

ness, government and individuals.

The information's owner can control access, just as he could if the materials were on paper and placed in a vault. From law enforcement's point of view, however, encrypted materials present an obvious problem: If someone is suspected of shady activity, the police can't get a warrant, walk in and blow the lock off

the vault That tension has stretched on for almost a decade, with no real compromise in sight. Perhaps the absence of a solution is the result of a common human failing: seeking a comprehensive answer to a difficult question. Another way to solve a large problem is to take it apart and address it piece by piece.

Recently, Cisco Systems presented a concept that moves the encryption discussion forward percisely because it doesn't attempt to do too much. Cisco proposed a "private doorbell" scheme that's easy to understand. Some type of

organization (your employer, say, or an Internet service provider) manager almost every point of access to the Internet. Thus, such organizations serve as

Under the Casco plan, before information is encrypted to pass safely through the "door" onto the 'net and after it has passed through the door on the other end and decrypted, the doorman has an opportunity (with the assistance of

routers) to pull out messages that law enforcement has identified in a warrant. Cisco's private doorbell is bound to generate intense discussion. On the positive side, it may render moot one of the issues that divides private industry and law enforcement real time decryption.

Law enforcement has pressed hard for the industry to develop the capacity to decrypt ecrambil messages as they pass over the Internet, Industry has resisted. If the private doorbell becomes a reality, the argument for real-time decryption loses much of its force

Materials move so rapidly in cyberspace that the justification for real-time access no longer holds water. If critical material can be collected at either end. what difference will a few minutes for less) make?

Cisco's proposal would also leave industry free to develop models for encryption-key recovery that satisfy business - not severnment - needs. Several organizations have begun to

build much bearing models for key recovery but have been hampered by confusion about what the govern-

ment may require. doorbell plan, those

A recent encryption proposal, though imperfect moves the issue forward

models could succeed or fail on their There are plenty of concerns in a pri-

vate doorbell implementation. Systems and access control on either end of the Internet message stream are the bigges challenges. Who should have custody of diental materials between the sender and the Internet or between the internet and the intended recipient? There is some case law that can provide guidance, but the matter is far from settled.

Privacy advocates point out that almost every step taken to case Internet transactions also decreases personal privacy. Authority given to doormen and law enforcement under the private doorbell plan would be no exception

Discussions about encryption have a long way to go before they result in a consensus. But by chewing on a piece of the problem. Cisco shows that encryption is not a single. impenetrable puzzle. Rather, it pre-sents many difficult questions that should be worked out one by one. O

Frye is a Chicago attorney who prac tices in the area of high-technology law. Her Internet address is emilyfrye@ibm.net.

## Limited (stock) options in Silicon Valley Dan Gillmor

f Silicon Valley and the technology industry in gen-red-hot Silicon Valley economy, some less worthy behavior. People have eral are an economic rocket ship, stock options fill one of the fuel tanks.

So when the Dow Jones industrial average took a 513-point whack two weeks ago and then, after a brief recovery, con tinued down for the week, it was as if a honster rocket surre

sputtering, maybe flaming out entirely. More than any place else on the planet, stock options are a normal part of the compensation package at

technology startups, some of which have grown exceedingly big. In a market where the overall trajectory has been up: they've rewarded excellence and mediocrity alike, allowing companies to get ahead by persuading Wall Street investors to pay the major part of some extraordinary deals. Microsoft, for one, has used this method

The economic bumpiness, which con-

IT workers who've forgone the lure of the start-up needn't feel like chumps in today's economy.

needed reality check to the IT industry. By any rational accounting, the rocket was close to seering out of control, with share prices reaching absurd levels even for firms that showed scant prospect of profits in the foresecshie feture

Please don't minunderstand: Options are a certifiably good thing. Handled properly, they reward employees by giv ing them a genume stake in the success But they also have encouraged, in the

learned to treat their careers in what Mitchell Kertzman. CEO of Sybase, likens to momentum investing, where investors ride market trends

until the first sign that a company may (it always does but the wall. Then they had out Translated to employment, a worker's loyalty to a company lasts only as long as it looks like the options might be worth something, It's all too routine for

Valley employees to job hop timued last week, has bequebt a loneeach year and to demand even better packages from their latest employer. But suppose, for the first time in the lives of the twenty- and thirtysomething tech workers, that the market's over, trend is down or flat. And suppose that

technology stocks begin to behave the same way. A lot of things would change. Some IT pros may have felt like chumps the past few years, earning a steady salary in a corporate shop when, if they managed to join precisely the right start-up at precisely the right time. they could have gotten rich enough to

buy a house in overheated Silicon Valley If so, it's safe to say they don't feel like chumps anymore. After all, they have job security - or what passes for it today -

and a decent retirement plan. And if options at IT companies begin to be less attractive, will life be easier for hiring managers at corporate IT shops They've been complaining for a few years that they can't compete with vendor companies. The stock market drama may have helped swing the pendulum back in favor of the safe-and-steady corporate shop.

Tech salaries are beginning to me ate, according to Computerworld's latest survey. But if options fade as a realistic form of compensation in most cases, IT managers will need to find other ways to keep the best people around, and that ld mean raising some salaries. The job-hopping tendency of workers might also ease, however, if the prospects for big money - usually a function of options potential - fade somewhat as a lure.

Gillmor is technology columnist at the San lose Mercury News. His Internet address is apilmor@symercury.com.

## Two Bills on the hot seat David Moschella

pparently, William H. Gates III and Microsoft have learned very little from the escapades of William Jefferson Clinton and his White House spinmeisters. So far at least, the world's wealth-

iest person appears to be defending himself and his company in pretty much the same manner as the world's most powerful leader

And the way things are going, the results for Microsoft woo't be a whole lot

Indeed, at times the two Bills from to be operating out of the same legal playbook. Like the White House, Microsoft has pursued a strategy of self-righteous denials, frivolous legal claims, frequent ocedural delays, convenient memory pses, secretive testimony and, most distressingly, sharp attacks on its perceived sies. In another time, each of those tactics might have seemed normal even appropriate. But in today's environ-ment, they just tap in to our deep disgust with the entire Clinton debacle. "Clintonesque" is certainly the eas way to sum up Microsoft's recent altempts to do the following:

Obtain a summary indement to dismiss or limit the entire Department of ustice antitrust suit. Prevent Gates' testimony from enterng the public domain.

Deny that the company has a mononoly on PC operating systems.

Apparently quibble about whether there really is a market for browsers or PC operating systems. (Of course, this is the same company that insisted that Windows 95 and Internet Explorer really

were integrated products.) All those parallels might just seem to be unfortunate coinci dences for Microsoft if it weren't so obvious that the main motive for both Gates and Clinton is to avoid confronting the truth.

That's the truly wormsome narallel. just as the president's lies regarding the Monica Lewinsky matter grew from his all-out effort to end the Paula Jones case. so is Microsoff's current legal chicanery armed at covering up its no-holds-barred assault on Netscape. As I've been writing since 1996, when Microsoft deliberately chose that course, at that juncture the company forever branded itself as a predator-at-large. It's too late to start

enying it now Don't be surprised if the parallels be ween the two Washingtons continue. Clinton's reputation is in tatters, his presidency at risk --- even the lones case might be reopeoed. Similarly, Microsoft's public image has

changed in some quarters from that of a great American success story to that of a brutal and insatiable competitor. Its words and actions have only embeld.

Gates and Clinton seem to be operating out of the same legal playbook

ened Justice Department lawyers. All that's required to complete the symmetry now is for Netscape shareholders to sue Microsoft for billions in compensatory damages. Like Clint with Jones, Microsoft will then wish it had settled out of court. A few months from now, the Justice Department's price inal demand that Microsoft distrib Netscape's Navigator along with Win-dows will look like a very small price to

have paid indeed Underlying all the legal similarities is, of course, a common human dimension. Just as Clinton has refused to accept the personal responsibilities that come with his great office, so has Gates failed to

acknowledge and accept the special standards that come with his immense market power. It's that failure to adhere to established societal norms that has landed both men in such trouble. Clearly. Clinton's of fenses are infinitely more blatant and disgraceful. But in the end, both men will be shown to have abused their power — and both will be punished for it. a

Morchella is an author, independent consultant and weekly columnist for Commuterworld. His Internet address ·is dmoschella@earthlink.net.

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## Corporate Strategies

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## Hospitals shave costs

Web-based information exchange brings doctors, patients together

By Sharon Machlis BOSTON

A GROUP of major Boston hornstals is achieving savings "in seven figures" from a wide-ranging rmation technology project designed to let hospital depart nts, doctors and patients share information. The project includes a mas-

sive World Wide Web site part public, part limited-access extranet — that offers information about doctors, medical procedures, treatment guidelines and participating hospitals. But it hasn't been easy to get everyone to buy in.

it's like herding cats," said Dr.

ons," said Tom McMi

Global's chief financial officer

That means Shelton may be

\*Convincing doctors to do something and retrain them .

Jonathan Schaffer, associate director of the decision systems group at Brigham and Women's Hospital. 'We have to make a few baby steps." For example, while Brigham

has had a robust E-mail system for years and doctors are accustorned to using it, doctors at other institutions still don't

Hospitals, page 30

Vender, page 30

## Oil vendor wins with tiny IT staff

By Julia King WALTHAM, MASS

GLOBAL PETROLEUM CORP. has 400 employees, a string of gas stations, a5,000 home heating \$2.5 billion - and an IT staff of five. Yep. Eive.

Five people to handle all the day-to-day stuff, plus the conversion of more than 30 systems from the businesses Global has acquired - businesses that handle everything from jet fuel to home heating oil to the curve grease that hibricates the tracks of Boston's rapid transit system And now, Global is about to business. "With little notice, we may enter a new aspect of the business, decide to sell a new product or enter a new pricing plan, so we forever have had to be light on our feet," said Jim Shelton, information technology

As the company has grow from a simple home heating oil supplier with 8,000 customers in 1973, its IT organization has ined small by design.

"We've come to the conclusion that it's simply more costefficient for us to outsource a lot of our expertise. But to do that, you correspondingly have to have people in-house who

managing contractual relationthine with a half-dozen unndoze at any one time can make good outsourcing de

At Global right now for example, consultants from Oracle Corp. are implementing new Oracle enterprise financial ap-



## **Broker keeps containers** from shipping empty

By Thomas Hafiman

CONSIDER THIS The worldwide shipping industry spends \$20

billion per year to move empty containers from one port to In other words, one in five containers in transit is filled mainly with fresh air, said Paul Crinks, a vice president at Greyof Transamerica Corp., financial services firm in San Francisco with revenue of \$5.73 billion last year. Talk about underutilization

Seeing a market opportunity, Transamerica early last year launched a business service called Greybox to serve as ao electronic stock exchange to match carriers that have extra box Logistics Services, Inc., a containers with those lacking Purchase, N.Y. based subsidiary



#### Airmax management package keeps vacant seats to minimum

By Laura DiDio

two new vieto management and revenue management pack-ages have helped Alaska Air roup, Inc.'s fleet of planes take off at or near capacity and at the same time keep overbooking to a minimum, leaving fewer customers grounded.

The result up to a 10% drop in overbookings and an oven 1% to 2% return on investment in the past nine months.

The Alaska Group - com prising Alaska Airlines and Horizon Air - makes 1,000 flights each day, said Terry Alexander, manager of revenue systems

Last November, the company abandoned its outmoded manual system to track open sents and discount them for rapid sale, and replaced it with the Sabre Decision Technologies Inc.'s Airmax revenue man

Airmax, page 30

## IT'S HIS FIRST DAY ON THE JOB

(Of course be already knows everything)

thing U.S. worker has held an average of arly nine jobs betw the ages of 18 and 32

with most of the job before age 27.

Source: U.S. Bureau of Labor Statistics



e on its IBM AS/400

rance extranet Inc. to build an in-

M links ERP ages ed on TSI In-



Or Jonathan Schaffer save

## Hospitals shave costs

· Web-based information exchange brings doctors, patients together

By Sharper Machine BOSTON

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Talk about underutilization Seeing a market opportunity Transamerica early last year launched a business service called Greybox to serve as an electronic stock exchange to match carriers that have extra containers with those lacking containers.

Tracking service, page 30



### Airmax management package keeps vacant seats to minimum

By Laura Di Die

TWO NEW YIELD management and revenue management packages have helped Alaska Air Group, Inc.'s fleet of planes take off at or near capacity and at the same time keep overbooking to a minimum, leaving

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Cubed. Inc. in Wilton, Conn.

Airmax user

CONTINUED FROM PAGE 29

ment system and Tivoli Sys

terns. Inc.'s Maestro automated

job scheduling system. The two

new systems let Alaska and

Horizon better forecast trends

and plan seating enpacity, said Dan MacDonald, director of

computer services. MacDonald,

along with Rick Pikonen, over

Alexander who is their "one

tomer," runs the Airmax yield

y's World Wide Web site

review bookings and capacity

information, such as the nightly

Under the old system, some

and establish trends."

sees the Maestro system.

flying high

## Tracking service

CONTINUED FROM PAGE 29 Under the service, which is

supported by an Interpet-based system called Tradesonline, a shipping company planning to move, say, 40 empty containers from Los Angeles to Hong Kong can check to see if other carmers want to "rent" those containers for that leg of the iourney

Greybox representatives then se a Microsoft Corp. SOL Server database to search for an appropriate match. Greybox charges \$50 for each container that changes hands, and the shipping companies save between \$250 and \$400 per container by having another company move it for them. Crinks

devonline "helps us to track and utilize containers more effectively," said Loreto Medina, manager of container logistics operations at Compania Sur Americana de Vapore a shipping company in Valparaiso, Chile, that has used the

net service for two months Transamerica is facing stiff competition, as other transportation brokers "use the Internet to take advantage of soliciting freight," said Jeff Medford, a transportation ana lyst at William Blazz & Co. LLC, a Chicago-based investi

To ensure the authenticity of conline users and to deter mine which applications each customer was entitled to access, Transamerica Leasing - a Purchase. N.Y., subsidiary of Transamerica that built Tradenbuttons available for users to click on based on that user in-To date, Transamerica bas

spent more than \$1 million to build the system, said George Reslly, director of business sys age called ECProfiler from EC tems at Transamerica Leasing. The service has been a hit: Transamerica runs ECProfiler Greybox is interchanging 1.200 containers per month for 150 on its Tradesonline World Wide Web site to intercept customer customers, and the interchance rate is growing 30% per month messages, check the database to see what privileges that account has and influence the appear

Still, less than 1% of the busi ness Greybox is completing is ance of the Web site and the

launched by customers over the loternet, which is a cheaper way to process orders than by

Part of that stems from persuading customers to shift away from using the telephone to negotiate deals. Supporting telephone-based transactions "is

very labor-intensive from our standpoint, Reilly said. To combat the problem. Crinks and his team are evaluating incentive options, such as a frequent-usage program or In-

ternet pricing models.

data feed profiling airline rese vations, equipment and scheduling, resided on mainframes Other data resided on outmoded applications.

management system that uses details of the daily reports fur "We'd periodically screen nished by Maestro to notify scrape - manually build a file reservation agents to fill seats at of the flight information and newly assigned rates or auction FTP it over the mainframe and off leflover seats on the com mbine it with other data." Pikoneo said. Now, he says, The name of the came is to Every night we get an advanced have our planes go out 100% full." MacDonald said. "Maestro booking file containing infor-mation on our flights up to 325 lets us look at every flight and days in advance."

The prior system allowed only the managers to view flight departures, backings and canacity levels 98 days in advance.

Now four yield-manage alysts "point and click, and the new system finds open seats and the latest information in-

staoth," Alexander said. Maestro's and Airmax's combined abilities to better monitor trends and forecast peak and slow travel periods have yielded another dividend: They forecast optimal overbooking levels to assure the fullest flights and minimize overbooking "In one market seemen

done, we've reduced our denied boardings by 10% io a given month. We're getting more people oo flights," Alexander Hospitals

want their E-mail addresses

made public. The project team looked for support from what it called the "five Cs" - CEOs. chief operating officers, chief financial officers, chief informa tion officers and chief medical officers - to gain acceptance. PartnerWeb ties medical centers and doctors who are part of an organization

called Partners Health Care Sys tem. Inc., which overnees the af filiation among many doctors and hospitals, including Brigham and Women's and Massachusetts General Hospi tal. Work on it was begun in May 1995, and it has been online about a year and a half. There was a lot of intern to be done - not only among the institutions, but also with departments themselves, Schaf fer told the Business World con-Ference in Boston two week ago. In one case, he said, infor tion on orthopedic pati

was being entered to times into

various datal

Parts of the as,ooo-node net work offer the public Web access to medical information and research and the ability to request appointments online. Other information is just for Partners Network members including guidelines for doctors who refer patients for admission. Patient records aren't on the network. Schaffer, a practic ing orthopedic surgeon, said he as had patients come into his office with printouts of his biography from his Web page

The health care industry has been comparatively slow to adopt Internet technology in part because of security, privacy and regulatory concerns, said Erica Rugullies, an analyst at Giga Information Group in

Cambridge, Mass. And with a multitude of standards, setting up electronic transactions can be difficult. But institutions that have moved to systems such as IP-based elec-

tronic data interchange are seeing significant sovings, she said PartnerWeb has seen big savings from relatively simple things, such as posting thousands of pages of research on the Web instead of printing them out. Schaffer said. Other features, such as explanations of medical procedures, have been

and Oracley applications "I've never liked people helpful to patients. "Now we are whose positions are so tunnel-vision that they have one funcseeing a mandate from the CEO of the hospital" for doctors to tion " Shelton said "That would beef up the content on their drive me crazy.\*D pages, he said, O

## Vendor keeps staff lean

CONTINUED FROM PAGE 20

plications. A different systems integrator is migrating a proprietary. Unix-based system for tracking oil futures transactions to a new Windows NT platform. Global also has outsourced management of its wide-area network to United Corp. Managing outrourcers is a maor challenge for many internal IT organizations, which often have problems getting the service they pay for, said Pete Pijawka, a principal at Aligne Inc., an outsourcing consultancy in Wayne, Pa.

They've grown up in interna IT onunizations that have been delivering services and prod-

ucts, so it's difficult (for them) to behave like a customer and demand things of the outsourcer," Pijawka said. But in years of operating lean and mean, outsourcing most of what he can't do in-house. Shel-

ton said he has developed a very good feel for choosing the right service providers and making the relationships work well for But precisely how he chooses

service partners is difficult to put into words: he relies on a gut feeling, he said. At Unitys Corp., for example, elton was once waiting for Chairmao Larry Weinrach to

join him at a meeting with other Unisys users. Weinrach was late and entered the more past as lunch was being wheeled in. But the caterer had trouble setting her cart over the door iamb. Without nausing. Weinrach tucked his folder of papers under one arm, lifted the cart, into the room, then started the

Shelton's gut feeling said that this was a vendor who could get things done. But you can't outsource everything, which means Shelton and the other four Global IT employees have to juggle multiple tasks and mas-

ter many technologies. Chris Matthews is the arche typal Global Petroleum IT employee. Hared two years ago as a computer operator, Matthews does the usual tape-mounting

and backup work. He also troubleshoots desktop problems for 200 users in Waltham and oversees the company's Net-Ware from Novell, Inc. and Windows NT networks.

"For me it's wonderful because it offers the opportunity to constantly learn new things That's what I like about wear ing a lot of different hats." Matthews said

And though Shelton is chief IT strategist, his desk is still a jumbled collection of wrenches, nut-drivers and power cords nestled among Oracle? server



American Comments of Comments

NOSSAW WILL MARKET IN THEIR A WHOLE OF BRITTER with a view her product for does broard, and and makes operation to images once and data within a single speller. Design for detent of conditioning represent production has been defined useful by an 25 proom within your case and data works to single, product from speller - operation from other you to seduce make and can be you to 25 proom within your location for the contraction of the contraction

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## Internet Commerce

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. Intranata

## Seafood buyers, sellers cast 'net

By Sharon Machlis

THE INTERNET IS letting Seafax, Inc. fish around for a new line

The Portland, Maine, com any's main service has been owiding credit reports to comnies in the meat, poultry and seafood industries. But with the

ent of the World Wide Web. Seafax has launched a project aimed at matching up scafood yers and sellers Seafood) is the last food that's bunted," said Seafax CEO Neal Workman, Therefore, sup-

plies can yan widely from week to week depending on fisher-men's hauls. "And it's an extremely fragmented business," he added. "There's no Frank Perdue of fish."

If you've ever wondered how ddock gets to your supermarket, a lot of low-tech searching typically goes on. A fish whole

fax the information to dozens of ntial purchasers, hooing to find a company that needs it. A restaurant or grocery store meanwhile, could be making

dozens of phone calls looking for someone who has it. Enter GoFish. The new Web site (unw.soufax.com/gofish), developed for Seafax by Extraorise Group in Boston, lets sellers post available products and buyers post what they're seeking. The database informs users if there are already any matches

Sealood, page 34

## Chat client speeds up trade info

By Roberta Fusaro hen the Dow is volatile, f

Which is why Ch cGinnis, a con nate, is glad he switched r months ago from fax to

mation to day and position traders via AbbottChat self-ware from Abbott System

long," he said.
"Time is of the

## Resellers are new Web trainees

· Companies tap 'net for product training By Bark Cole-Gomolski

WEB-BASED training has been slow to take off as a replacement for corporate classroom training. However, Web-based systems are gaining ground with companies that need to edate their channel partners Companies that offer training rograms via the World Wide Web or their corporate intranets are still in the minority. According to the American Society for Training & Development in Arlington, Va., less than 10% of panies are doing this - in part at least, because it takes time for companies to build the

secure systems that support such applications. But Web-based training systems are catching on as a way to distribute new product infor-mation and host collaborative

of forecast for Websed trai



tributors, enabling companies to trim travel budgets and reach a wider audience.

We didn't have enough seats available in the classroom or enough instructors to train everybody," said Rob Donald. of telephone switches. In the past, the co would invite resellers to its facility to learn about new prodsetting. A lack of space in the secroom wasn't the only issue Reseller companies found it dif-

ficult to free up a technician for a two-week class, Donald said. Today, Mitel's distributors can receive paper-based course materials and then participate in Web-based discussions using Symposium from Centra Software, Inc. in Lexington, Mass. The software has the ability to handle remote demonstrations and can be accessed using a

Tricia Reardon, technology training supervisor at Advest, Inc., a Hartford, Conn.-based brokerage firm, uses Symposium to educate about 500 brokers in 90 offices about new educts that the company ns to offer. "We used to trav

## Seafood buyers, sellers cast 'net

posted on the system. Users can also check the credit reports on a buyer and the quality ratings

of a seller More than 150 companies have signed on to test the system, including major guccery Red Lobster. Some postings can initially be done anonymously so prices don't rise if people learn, for example, that Red Lobeter is muldonly in the man

ket for a lot of shrimn We have been able to find fish that would have probably taken as many as a hundred one calls to find," said Mark Soderstrom, president of South Streim Scafoods, Inc., a Warwick, R.L. fish wholesaler and importer. "It's a buse timetrial phase that is expected to wrap up next month. For now use of the system is free. Begin ning next month, anoual subscriptions will be available at prices ranging from \$5,000 to \$7,500. Although he didn't discuss specific figures. Workman said he expects the system will

show a profit by next year. The technology behind the site was pretty straightforward Workman said creating the site primarily involved developing a database of inventory and a Web front end to access it. The main glitches so far have to do with browser compatibility

GoFish was designed to take maximum advantage of capabil ities in Microsoft Corp.'s Inter net Explorer a.o. It usn't work ing well with America Online.

Inc 's interface Gary Prozuti commodities trading.

seafood purchas ing manager at Publix Super Markets, Inc. in Lakeland Fla., said he isn't able to properly post to the site using an older version of Explorer and has to make his postupes by telephone to Seafax

happy with libe fish! I've out ten," Pizzuti sasd. "But if I can't get (Internet Explorer) 4.0 from nor company. I'm not some to

sign on." His company has strict rules about what software it allows users to install on corporate desktops. The site is part of a growing

trend to create virtual marketplaces for surrous industries on the Web.

Last month, for example, two of the nation's largest steel companies announced MetalExchange for buying and selling various metals as well as disseminatine industry news and

#### "It's an extremely fragmented business. There's no Frank Perdue of fish" - Heal Workman

Soafay CFO ICW. Aug. 24l. Another such site for the buttery industry is in the works, and there are other ventures targeting utilities and

"It's the third wave" of busi ness-to-business electronic commerce, after sites posted by sellers and then those created by purchasing communities, said Erica Rugullies, an analyst at Giga Information Group in

Cambridge, Mass. For the time being, Workman said. Seafax will generate revenue from the site the same way it does from its credit busi ness - through annual sub-

Someday, though, he said, he believes Web middlemen might also be able to get small transaction fees. "This," he said, "will make our core business look like a 'lly on an elephant's bottom."

turn into a big porty: "Half the group will stay out all night and be sleep-deprived the next day,"

#### COLLABORATIVE

ence calls, fail to provide the level of collaboration companies are seeking. For example, when Octel rolled out a product to its channel part ners, it would troically fax information to about 75 resellers and then get everybody on a conference call.

The first 20 minutes of every conference call involved making sure everybody got the fax and resending the info tion to the people who didn't."

Butz said.

#### Chat client speeds up trade info

CONTINUED FROM PAGE 33 as dramatically as it did two weeks ago. "I needed to get all

our (thousands of) subscribers out of a position immediately. With AbbottChat, McGinnis sends an instant page to clients regarding market changes. They receive the information within about 12 seconds and can buy or sell stocks based on that information. Faxing that informa-

tion to clients took up to three minutes per transmission. By that time. McGinnis said, his MESSAGING. head into the office clients had already lost money McGinnis said he averages

about so AbbottChat messages per day on the system for all his cliente Transmission costs are zero, be said AlthoriChat real.time message

ng software was released in May. It is typically downloaded free from the Internet, but Ab bott Systems offers customized customer-service robots and other chat-based programs for a fee. Abbott Systems also sells advertisements, which appear in

#### a message window. SECURE CHAT

chat."

Tim Bayrin, president of Creative Networks, Inc., a research firm in Campbell, Calif., said AbbottChat is different from competitors such as Miribilis. Inc.'s ICO. America Online's AOI Instant Messenger and Activerse, Inc.'s Ding in that it provides "secure, point-to-point

The others use a global network model, he said. Abbott-Chat doesn't relay messages through a server, so it is better for setting up private con cations within a company. Access is restricted, Bajarin said. According to Abbott Systems. users can access other users only if they know the identification ournber - alone the lines

of public phone lines without the party-line feature. Businesses typically don't rely on chat software for mission-critical functions across a company Baisein said, but the AbbottChat model could help change that within the next few

Bob Cox, president and CEO of office-support provider Mobile Word in New Rochelle, N.Y., said he uses AbbottChat as a primary means of quick. two-way contact management between staffers in far-flung

offices.

Cox's company offers services such as data entry, text transla tion and ware-to-test conversion

and transcription, accessible over the Internet. It has nine full-time employees in the New Rochelle office and more than iso operators and purport staff at offices in Ireland, San Diego Portland, Ore., and Lone Island

Cox said he keeps the Abbott Chat window up and running on his system so people cao ge in touch with him quickly. see it as the equivalent of sticking your to ask a quick question. For a

decentralized group like Mobile Word, it's perfect," he said. He said the Internet-based program is efficient for holding meetings; the team has to simply click on an icon to call

Cox said for more substantive conversations, staffers jump on the phones or into a conference room, "but let's just say [AbbottChat] is one alternative." And the quick communication can move projects along faster, so costly delays are avoided."

### levond PCs

-- Kristi Ess



#### sfax's GoFish site lets sellers post pro urts and buyers nost what they're seeking

place the 'old-fashioned way. Parties fax or E-mail price lists and often haggle over the final price on the telephone. "That's part of what I like," Soderstrom said. "I like to talk to people when we do the deals "

In July, GoFish launched a Resellers get Web-trained

#### CONTINUED FROM PAGE 33

a presentation," Reardon said. Although Web-based systems are proving to be useful and cost effective when training channel purtners, there are pitfalls to the approach. "You can't really hold some

one's attention for more than half a day" if they are participating in a Web-based seminar. said lim Butz, a senior manager at the Octel messaging division of Lucent Technologies, Inc.

Butz uses Denver-based adband Associates' M.Show service to brief channel partners

el to each branch office and give about new products. The service costs about \$1 per mioute per participant; Butz limits his Webbased presentations to three hours or less.

Bruce Richardson, vice president of research strategy at AMR Research, Inc. in Boston said Web-based training sys tems are still one of the best ways to manage product launch es or engineering recalls. This is a cost-effective way to

cumunicate a change about your product," Richardson said. In addition, when you have to train resellers in person, it can



It was one of the most vinited Web sites of all time, in all, the Trace '93 kips owned by software from Sybase, generated over 15 billion his from more than 170 countries. Shoppers purchased USS billion his from more than 170 countries. Shoppers purchased word Cup merchandle via an e-commerce store that averaged over 74,0000 his per day. Journalists and staff members refer on an infrinction throat to access valuable, height information. From the Web to e-commerce to intranes, france '99 was a global success, and one that we can replicate for businesses like yours. With our proven technology, we can create completes Web touldions that enable your company to bring together and distribute mountains of information to provide the competitive advantage you need to device you are calcitated and gain for the contraction of the france '99 Web touldion and what we can do to your business of the Fance '99 Web touldion and what we can do to your business.

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CYBERNEDIA, INC. has announced Guard Dog 2.0, privacy software for users connected to the Internet.

According to the Santa Monica, Calif., company, the software controls cookies and other technologies that third parties use to track online behavior. It was designed to prevent transmission of personal information over nonsecure connections or through bogus applications. Guard Dog 2.0 costs \$59.95.

(310) 664-5000 www.cybermedia.com

INSO CORP. has announced DynaBase 3.0. World Wide Web publishing and content management software for large news, technical or financial publishers.
According to the Boston-based com-

According to the Boston-based company, the software now supports Extensible Markup Language, the successor to Hypertest Markup Language. New workflow capabilities can automate the process of authoring, editing and publication approval. The software plays in to Microsoff Corp.'s Internet Information

Server or Netscape Communication Corp. servers running Windows NT 4.0 or Solaris a 6

Pricing starts at \$47,000.

(617) 753-6500 www.inse.com

FRESHWATER SOFTWARE, INC. has announced Global SiteSeer, a service that monitors World Wide Web sites to check performance and availability.

According to the Boulder, Colo., company, when local or global access problems are detected, the service notifies site administrators via pager or Email. Using a browner, site administrators can access information about the visibility of their site to customers, Web-page access, download, times and to different man-

An annual subscription starts at \$1.405.

\$3.495 Freshwater Softwar (305) 443-2266

BRIGHT TIGER TECHNOLOGIES has announced ClusterCats Turbo, application load-balancing software for improved. Web site speed and reliability.

According to the Acton, Mass., company, the software works on a simple World Wide Web tite comprising two servers. It manages performance for Microsoft Corp. Active Server Pages and Common Galvany Interface or Hypertest Markup Language page applications. It holds each user senson to the same server to preterve application performance and transaction success.

It costs \$795 for two servers. Bright Tiger Technologies (978) 263-5455

ARRIBA SOFT CORP, has announced Arrib

Express, a file management and viewing tool that helps users manage World Wide Web data types. According to the Emeryville, Calif., company, the software recognizes move than 400 file types, including image,

text, video and audio files. It also provides native authoring tool support, search capabilities, project organization and a Windows-based interface.

Arriba Express costs \$149 per user. Arriba Soft

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#### The Enterprise Network

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# Briefs In nets, price isn't everything

· Managers rank it below other decision items By Bob Wallace

THE BAPIO PACE of technology development and increasing competition continue to force networking vendors to reduce prices to retain business. But many network man say price cuts don't affect their

network plans - not much anyway. In making networking decisions, 'cost cuts matter less than the power of the technology, vendor support, network manage

ment features, training and sance, users say We focus on the total cost of ownership of projects becau there's the cost of training and network management to consider," said Alan Robson, director of network systems at coupon giant Cox Target Media, Inc. in Largo, Fla. "Price is always a factor, but technology and product capabilities are first and

foremost with us. Support and long product life cycles are paramount to Steve

Even price cuts of so% are "marginal," said Lopez, network

Philadelphia work, the price-per-port cost of

products is not nearly as impor-

ager at The National Board Medical - Frammers in "When we're planning a net-

support the hardware and the performance of the equipment," he said. "We're more interested in the vendor's ability to ungrade a product to keep it alive fover timel.

And most users won't change vendors just for a price break, either, Lopez said, "Users are work infrastructure for economsc gain. There has to be a very radical change in technology that they can't get from their [current] supplier," he said CardService Internationa

Inc. in Agoura Hills, Calif., is considering a move from a Fiber Distributed Data Interface backbone network to one based on Gieabit Ethernet, mainly to add high-speed routing switches to the network, according to Sean Gilbert manager of infor-Price, page 40

OPERATING SYSTEMS

#### NT 4.0 deal would line up users for 5.0

Br Sharon Gaudin

IN A BID to line up Windows NT 50 users possibly a year before the system ships, Microsoft Corp. is cutting users a deal in a stepped-up effort to get corporate information technol managers to trade up to NT Workstation from Winds 95 and the just-shipped 98.

Bill Peterson, an analyst at In ternational Data Corp., a Computerworld sister company in Framingham, Mass., said Microsoft is hot to work NT into the enterprise. And that may not happen as quickly as the company would like if users are

waiting for NY s.o. to come out MT 4.0 deal, page 40

ristation but not because

unit shipments



### HR getting dedicated call centers

By Matt Hambles

nel manees.

OVER THE PAST YEAR, many large companies have given their call centers the additional task of fielding calls from employees with questions about their job and other person

A centralized human But there's a new wrinkle: Pioresources help desk neering companies have created gives employees one ed solely to hupoint of contact.

staffed with people specifically trained to handle employee

Sears, Roebuck and Co. has built a dedicated burnan resources call center to serve the investment and ongoing benefit needs of 300,000 former and

and Lockheed Martin Corn. in Bethesda, Md., is about to ers and former workers who launch a benefits center for

thousands of its workers. "It's been a work-in-process to have our HR functions cenbenefits, 401(k) investments tralized, but it's worked out we'll

and has certainly cut costs," said Sam Goodson, integration man ager at Hoffman Estates, III.-based Sears. "We used to have 20 pay-

roll centers and maybe ao different HR centers. and now there's just one, in Tucker, Ga." Goodson wouldn't discuss the

amount of the savings but said a study of the project's return on importment is under war. All told, the Tucker center

in one place and connect it to a central pool of trained callcenter agents, analysts said. That dramatically reduces the time buman resources person nel spend on phone calls, ensures that the information

> accurate and avoids the need to have human resources staff located in every branch office. a single point of contact for employees to call or contact over the Web," said Jim Halincheck

wide and up to 300,000 work-

need information, Goodson

Large companies are estab-

lishing dedicated human re-

sources call centers because

they can put all personnel data

Call centers, page 40

#### NT 4.0 deal would boost NT 5.0 He said that Microsoft samply is trying to make it cost-effective for customers to move to NT

over the long term. Microsoft's

position is that Windows o8 is

a consumer operating system

and not meant to be an upgrade

before migrating. If NT 5.0 doesn't ship until next year and users wait even longer for several option packs, it could be

2000 or 2001 before they make the move But Microsoft wants users to move faster than that. Peterson said. That's why it is offering a program that doesn't save users money on new NT 4.0 installs

but promises discounts on eventual migrations to s.o. he said. Nonetheless, some cor orate users wonder whether magrating to NT Workstation 4.0 will

make it easier or nest more painful to move to NT 50 when it ships. Microsoft has given no official ship date for NT 50, but

most industry-watchers expect it nest year. "It all would depend on how

difficult the migration is," said Bob Frase, director of unformation systems at United Paperworkers International Pinion in Nashville: "If I have to go out and retrain everybody for NT 4.0 and then NT 4.0, I wouldn't want to do that. We're going to wait for NT 5.0. I'm not sure my users could handle much

Microsoft usn't so much offering a sale as it is offering a cheaper upgrade to NT s.o. according to Craip Beslinson, Microsoft's product manager for Windows NT Workstation

"If I have to go out and retrain everybody for NT 4.0 and then NT 5.0, I wouldn't want to do that. I'm not sure my users could handle

much more change."

- Bob Frase.

**United Paperworkers International** from Windows of or Windows 1.1 for businesses, he said Beilmson said that for \$276. a user gets a license with the

option for a free upgrade to NT 5.0 over the next two years. That \$276 fee is \$38 more than what a basic NT 4.0 license

Industry watchers estimate that an NT 50 license alone will probably cost users between \$250 and \$500. A user has to buy at least five copies of NT

4.0 to qualify for the program. Peterson said the change isn't likely to be related to problems with NT Workstation rales. He said those sales increased by 208.5% last year from the year before

#### Call centers

CONTINUED FROM PAGE 39 an analyst at Giga Information

Group in Chicago. At Sears, one of the biggest benefits has been the ability to

cut down on the duplication of work if an employee calls sever-al times. Goodsoo said. Agents put notes on each call into a database, so that the next time the employee calls, those notes are instantly available.

Another advantage of a centralized human resources help desk is that employees have one point of contact. For example, Halincheck said

he knows of a large puckagedelivery firm that has 50 mum bers for employees to call. It wants to reduce those to one. But Goodson warned that spanies interested in setting up human resources call cen-

ters should be prepared to spend considerable amounts of time and money on training agents to handle humao resources matters.

Technology doesn't solve it all," he said. Sears worked with Quintus" Corp. in Fremont, Calif., to cre-

ate a database and Internet Protocol front end to give agents access to employee records Quintus used its experience with Seam and other communies. to develop a commercial pack-age of software and services for setting up human resources call centers. The resulting product called HRQ, is available for

\$50,000 per server plus \$2,000 There are numerous ven in the call-center market but Quintus is the first to offer a specialized product for hum

ources applications. Halincheck said. D

'No, they're not hurting a all," Petersop said, "This just shows how much Myrosoft wants corporate desktops to be NT. If you migrate to NT 4.0 you have two years conceivably

to move to NT 5.0. If you don't mind migrating twice. that's a sweet deal."

But how many users will want to make a migration twice in such a short time?

For Brian Brumit, director of business systems advisory services at Coopers & Lybrand LLP in Princeton, N.J., the special licensing deal poses some interesting questions.

Brumit said he had planned to move from Windows 95 to NT Workstation when NT 5.0 comes out, but now he is

considering making the move "It makes a much more com

pelling case to start in on NT 4.0." Brumit said. "It bedges our bets and locks them in to a 5.0 migratioo path. It further entrenches corporations into a

#### Microsoft future."D Ргісе

CONTINUED FROM PAGE 10 mation systems. Top considerations include performance, reli ability, wendor experience and

neodort scalability Sales do climb as prices drop, but some users upgrade to new technologies because they need more bandwidth or advanced features to streamline network operation, not because prices are falling, said Tam Dell'Oro, president of Dell'Oro Group, a Portola Valley, Calif., research

firm. "If I don't need to murrate and am happy with what I have, I don't care how cheap the next option is," she said. Nevertheless, per-port prices for switched and Fast Ethernet systems will continue to drop.

according to Dell'Oro Group. For example, a switched 10M bit/sec. lithernet port that cost \$211 last year and sells for an average of \$113 this year will sell for \$86 oest year and \$73 in 2000. Dell'Oro predicts. And a 100M bit/sec. Fast Ethernet port that lists at an average \$197 this

year will plunge to \$128 next year and \$95 in 2000. Those figures include price cuts and the debut of systems that sell at a lower cost per port. I

#### internal encryption

Network Associates, Inc. in Senta Clara, Calif., has begun shipping its PCP Enterprise Socurity 3.0 package, which lets man-agers socure traffic within their networks saling stable lay encryption. The product combines Ermall and file socurity with centralized server and management block. It integrates with E-mail clients, including Microsoft Corp.'s Outleds' 354 and Novell, Inc.'s GroupWise, A single client license costs \$84, and rms licenses for 1,000 sests or more are \$36 per sest

SHORTS

#### **Encrypting E-mail**

Mensaging server maker infinite Technologies in Owings Mills, Md., last week introduced an add-on security module for its WebMell and interChange mal server software. The module is board on technology from RSA Data Security, Inc. in San Mateo, Calif. It supports Secure Sockets Layer technology so use can encrypt information sent over the Internet and preven unauthorized users from intercepting and reading E-mail as it travels from point to point. Pricipe information was not

#### 'net-based collaboration

Innovie Software, Inc. in San Francisco last week as innover someway, no. in San Francisco test week announce Team-Center, a Cellaborative team management system. It is distributed teams and team members at a company coordina their projects over the Internet. It less team members and pre-cet managers view schedules, tasks, notes, reports and go-in real time. It is built on an enhanced three-tier SQL distabs. model that allows for almultaneous access to information by users. It will ship this month. The TeamCenter client costs \$95 per user. Server pricing begins at \$675.

#### Document sharing from 2Bridge

San Francisco-based alfridge Software, Inc. recently announce 25hare 2.0, a browser-based software pockage that lets user share corporate information by porting it and viewing share corporate information by porting it and viewing it brough a customizable top-way portia. Test, indica and vides files and illustrations posted to the corporate intranet are dynamically and sustemetically updated. 25hers as offers one-button World Wide Web publishing, personalized views and seamless access to information via Extensible Markup Lampage, it is available immediately. Pricing status at Exposs.

#### Lucent's unified in-box

Third-party developers were out in full force at last week's Microsoft Exchange conference in Boston, hoping to levarage the rising sales of messaging severs. Among them was Lucent Schnelogies, Inc., which demonstrated its Octal Uni-fied Messanger for Exchange, a system that late Exchange users collect volce, for and E-mail messages in a single in-box

#### PaimPliot goes cellular

Mitsubishi Wireless Communications, Inc. last week laws the PalmPilotConnection III, which enables wireless con nications for yCom, Inc.'s PalmPilot vis a Mitsubishi Mo the Parameter, Genecicon IVI, which misses wereast commi-rications for Scen, Inc.\*; PalmPilet via a Mitsubishi Mobile-Access 100 callular amart phone. The S110 bit will be available later this month through carriers such as AT&T Wireless, GTE Wireless and Bell Adaptic, Mobile.

#### Exchange add-on gets upgrade

Ottown-based Message/Wes, Inc. last week introduced an upgrade to its Message/s Menager's Assistant (SAM) for his coord Corp's Exchange messaging some Mersion as of abAA features a new graphical user interface, expanded event and service monthsteps and fully cuterobastic reporting epithast coordinates reporting epithast coordinates reporting epithast coordinates of the Corp. Samuel Corp. Samu



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FREE 800.304.1425 ACTIONTEC ELECTRONICS, INC. has announced - DataLink V.go/Ks6flex, a fax/modern PC Card for mobile users Software for fax and data com running DOS, Windows 3.x/95/98 or

Windows NT. According to the Sunnyvale, Calif., company, the phone-ready modern was designed for s6K bit/sec. Internet con nections. It supports both the Ktoffex

standard and the recently ratified V.90

tions is included. In the fax mode, the modern offers send/receive fax speeds up to 14.4K DataLink V.go/Ks6flex costs \$149. ActionTec Electronics

(40E) 752-7700 wactionles com

CHASE RESEARCH, INC. has announced the PCI-RAS4, a Peripheral Component Interconnect (PCI) card that adds 56K bit/sec. modern capabilities to NT

According to the Nashville company

one card enables users to install four dial-up modern channels on a server for applications such as remote access

Internet and messaging. The host interface is a 32-bit PCI bus. It supports plug-and-play compliance for up to eight cards per server.

PCI-RAS4 costs \$1,195 Chase Rese (614) \$72-0770

www.chaser.com

MTI TECHNOLOGY CORP. has announced the Gladiator Fibre Channel Multiplexer, a Fibre Channel-to-SCSI rout

According to the Anabeim, Calif., npany, the router lets users attach SCSI-based MTI Gladiator RAID storage arrays to Fibre Channel host systems running Hewlett Packard Co.'s HP-UX.

Two 100M byte/sec. Fibre Channel connections allow redundant loop attachment, and four UltraSCSI ports provide connection to the redundant, auto failover RAID controllers in MTI arrays. The product costs \$47.570. MTI Technology

(714) 970-0300

FOUNDRY NETWORKS, INC. has amon a 24-port version of its ServerIron server load-balancing and caching switch.

According to the Sunnyvale, Calif., company, the switch was designed for Internet service providers and large

It offers hardware-based load balancing and 10/100M bit/sec. throughput on

each poet. The switch costs \$18,995 Foundry Networks

(408) 731-3800

D-LINK SYSTEMS, INC. has announced DSH-16, a 16-port Ethernet/Fast Ether net hub for small offices and workgroups. According to the Irvine, Calif., com

pany, the hub has 10/100M byte/sec. auto-negotiation on each port and a built-in segment switch. The segment switch enables the indeendent Ethernet and Fast Ethernet net-

work segments to talk to each other without an additional switch. The DSH-16 costs \$100. D-Link Sy

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Intranets Series INFRASTRUCTURE: Battling Bottlenecks

tures, and rapid application development is making it hard for network managers to keep up with the demend. Attempting to unclog the bottlenecks, most network managers widen the pipes by throwing more bandwidth at the network. For some this is accomplished with Gigabit Ethernet; others are using ATM to beef up the network. Companies say caching and load-balancing eleviate some of the strain, but these are not long-term solu tions. And companies need long term solutions. This problem is only going to get worse...

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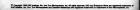
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addresses capacity planning, Service Level definition and reporting, and end to end response time reporting. OptiManag adjusts dynamic R/3 and database parameters in real time to match actual workload, ensuring maximum Cali 800-447-2336 throughput and improved response. It also manages user resource limits and batch job execution.

> Energizer PME for R/3 is the culmination of more than 15 years of experience in providing mainframe and SAP solutions that are installed at more than 1400 sites

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tion routines, it is simple to install, easy to use and overhead is lest than 1%. Four Energizer PME for R/3 components address specific needs

and can be installed independently, but each form part of a logical progression that provides a high level of integration when combined.



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esier to use than C/C++ d elmost as powerful

eve applets make it Highly portab

lows 3.1

# $\operatorname{\underline{Briefs}}$ Keeping supply under control

Demand rises for tools that ease bottlenecks

By Nancy Dillon MORE THAN 16,000 times last year, vendors supplying goods to Service Merchandise Co. supplier accesses Service Merrequested shin.

ments be picked up. Every request was processed by hand. Now, the process is fully automated, thanks to a private ex-

tranet paired with routing opti-"We only intervene now when an exception occurs, like when a vendor tries to ship something too early," said Bill

coordinator at the Brentwood, Tenn-based national retailer. The system kicks in when a chandise's Internet SUPPLY-CHAIN site to alert that an AUTOMATION order is ready for pickup. Decision n software, called

TransPro from CAPS Logistics, Inc., then batches the order with complementary orders to create full truckloads. Requests for transportation go out to third-party carriers, such as Supply, page 46



si-Cole General Bottlers' Pete Venegas: "If you try b rely on (CAPS's Supply Chain Designer) for certs

#### Data tools simplify Web publishing

By Dould Overstein WHEN PRINCETON UNIVERSITY wanted to put an entire warehouse of data online, it made a point of picking a tool that de-

velopers don't need a Princeton Ph.D. to understand. Princeton built its data mall with Oracle Corp.'s Web DB. one of two easy-to-use data publishing tools emerging in the

sign useful, data-driven pages AND RESIDENCE Analysts said the emerging

category of tools, which trade off power for rapid develop-Princeton's data mail was built with Oracle's Web DB, one of two easy-te-use data publishing tools now emerging

-

#### Microsoft, Platinum extend repository deal

By Stewart Deck

PLATINUM TECHNOLOGY, INC. and Microsoft Corp. two weeks ago announced that Platinum has been given the exclusive right to port the Microsoft Repository for meta data to non-Windows platforms. The deal ues the two con nies' working agreement to de-

market that let developers de-

from within a browser.

velop the next version of the Microsoft Repository Renositories hold companies meta data — the set of facts

about warehoused data that tells where data came from and what applications are appropriate for it — and act as the glue that holds data sets from wide-reaching applications together. By doing so, the applications can more easily sift through a data warehouse to search for trend A Platinum spokesman said the Oakbrook Terrace, Ill.-based pany soon will issue the first beta releases of the Microsoft Repository for Unix plat-forms that include Hewlett-

Packard Co.'s HP-UX, Sun Microsystems, Inc.'s Solaris and

#### **ERP** users need third-party reporting tools

By Crain Stedmen

FOR MANY USERS of packaged applications, mixing real-time transactions with reporting is like mixing oil and water. Take Chevron Products Co.,

for example. The petroleum refining and marketing unit of San Francisco-based Chevron Corp. tried to run analytical reports on its plant tivities directly off of the Indus

inc. asset mansoftagement ware used to

schedule and track repair worl Good reporting is a critical part of Chevron's effort to enable the thousands of mechanics at its six U.S. refineries work more effectively, said Sam Preckett, a former field maintenance supervisor and now IS manager for reliability-focused maintenance at

#### Reporting tools

#### CONTINUED FROM PAGE 45

But the custom reports run by the refining unit dragged down the Indus software's performance: Screen refreshes for mechanics trying to schedule

ute." Preckett said. And the reports were too basix to give executives at Chevron Products a deep view into "the nuances of maintenance," be

So Preckett's staff is now installing stand-alone data analysis software developed by Broadbase Information Systems, Inc. The Broadbase soft ware is in limited use at two re-Speries and should be deployed at all six sites by year's end. Separating out reporting from the maintenance scheduling

functions chopped screenrefresh times for Indus users to a matter of seconds in Chevron's tests, Preckett said The company can now tailor repairs "could take over a reports for mechanics, plant managers and other groups of

users, he said. -Cytec Fiberste, Inc., a maker of adhesives and composite materials used in the aerospace industry, this summer also de-

some custom financial reports

that were written for The Baan

cided to go outside its main business applications to beef up the reporting that finance employees could do. The Tempe, Ariz, based com pany initially tried to get by with

Co.'s application suite, which it installed last year to run Cytec Fiberite's finance, distribution and manufacturing operations. But creating the reports was

an elaborate and time-gobbling process, and users could pull only a few financial measurements out of the Baan software. said Orville Gore, accounting manager at Cytec Fiberite. "We

pretty much locked into just one [report] for mat," he said Looking to do away with those limits,

Cytec Fiberite installing Packaged analytical financial reapplications porting softfrom Online analytica FRy Software processing to Corp. at five

Now, Gore said, he and other countants can build their own reports and look at various financial indicators, such as qua-

month results

ter-by-quarter or month-by-Steve Bonadio, an analyst at Hurwitz Group, Inc., a consult ing firm in Framingham, Mass.,

of things companies look at" when they shop for packaged software. Many users just try to make do with the canned report templatet that come with their chosen applications, he said.

That can work, but only "if you don't need any depth to said reporting functionality what you're doing" on the re-porting side, Bonadio said. () often "isn't on the shortlist

#### TOOLS OF THE TRADE Officent types of analysis software:

Query and esic reporting reporting software ness Objects'

> Comshare's Decision, Pre-defined analysis Hyperion's Enterprise routines for specific users Foshase Oracle's

and data calculation Ad hoc analysis of data with multiple variables

ors not meet 100% of our

needs, but it meets 80% to

doesn't offer any programming interfaces. Instead, Web DB is

the conduit for simple publish-ing and query based applica-

tions. Although Web DB could

be extended with stored proce-

Zoppi said he also was uncer-

85%," he said. Zoppi said Oracle's tool

#### Data tools simplify Web

#### CONTINUED FROM PAGE 45

ment, will help upon soler the problem of quickly bringing data to the World Wide Web. Web Dfl will enter beta tests this fall and will be released in December, Version 1.5 of Net.DR from Centura Software Corp., formerly Gupta Corp., became available Sept. 11. Oracle and Centura are both based in Redwood Shores, Calif.

"It's about ease of use," said Mery Adrian, an analyst at Giga Information Group in Santa Clara, Calif. Virtually code-free

Princeton's data mall has given thousands of students onne access to their phone Web design tools can enable records and bills, given 800 adeven nontechnical users to ministrators access to internal financial data and given admiscreate pages on corporate intranets, a role that used to resions officials access to graduate quire a Common Gateway Inschool applications, said Rich terface or a Perl programmer.

sites. base and put control of them in

Pickett, director of data admin-Putting a Web interface on istration. Web DB uses the setop of a central repository of decurity permissions already conpartmental data isn't a new or untried idea, said Steve Zoppi, a delegate access to users. Burlingame, Calif-based analyst He said Oracle's Web DB is

reach of the average user

tained in the database to When the project started ore than a year ago, Pickett said, "we needed to find a tool just a particularly good attempt that was easy for my staff to deto marry Web objects to a datavelop with and easy to deploy to

of \$1,000 per shipment because the software belps us avoid buying less-than-truckload shipments," he said. Analysts said the popularity group has reduced staff by 24%. of software tailored to supply nens said. But beyond payroll. chain management is rapidly expanding Advanced Manufache said even bigger savingshave come from the routing opturing Research, Inc. in Boston mates that licenses for supply-chain software will reach

our users." Oracle cons cooked up what now has become Web DB.

dures, Zopei said. Oracle hasn't Pickett and the browser based development environ ment lets bim update sites retain about the tool's scalab although it performs well at motely. "I do it on vacation. I take my laptop, and I'll sit there and change a report."

\$1.4 billion this year and \$6.8

ford, Conn., said the supply

categories: tactical and strategic

with day-to-day logistics. Strat

gic software helps users re-eval-

uate distribution networks

through modeling and what-if

\*Users need both types of

software because with just tacti cal and no strategic, you may

simply be putting a bad busi-

ness process on steroids." Entlow said.

She also said companies can

save between 18% and 20% on

distribution costs if they con-

duct "a thorough rerationaliza-

Frameles of strategic supply-

tion of their practices.

chain management softwa

billion in 2002 (see chart).

Web DB's pricing hasn't been The limited capabilities of the set. Net.DB sells for between tools aren't a crippling draw-back according to Pickett. This Sags for a two-user license and \$595 for a 10-user license. D

chain applications include CAPS's Supply Chain Desig Insight, Inc.'s Sails and Ia Tech

Beth Enslow, an analyst at Gartner Group, Inc. in Stamnologies, Inc.'s Rhythm. Pepsi-Cols General Bottlers Inc. in Rolling Meadows, Ill., used Supply Chain Designer to market can be broken into two help choose the locations for a \$23 million distribution center TransPro is an example of tactical software because it helps under construction in Chicago and a \$6 million facility being

built in Peoria. Ill The software has saved money on consulting fees, said Pete Venegas, supply-chain manage at the bottler. But he said it isn't a silver bullet. "It lends a quatitative perspective to the interaction between variables (such as distribution costs, population

growth and customer service]," e sald "But it doesn't make decisions for you. If you try to rely on it for certainty, it will para lyze you with millions of ques tions," he added D

#### Keeping supply under control

#### CONTINUED FROM PAGE 45 United Parcel Service of Ameri-

debut, the inbound routing ca. Inc., in a round-robin fash ion via fax or E-mail. Once a load is accepted, final instructions are sent back to the

Since the system's March 16

tumization software "There can be a cost savings

Supply-chain management revens

at Meta Group, Inc.

Software licenses	\$860M	\$1.448	\$2.278	\$3.58	\$5.038	\$6.838
Maintenance	\$249M	\$367M	\$624M	\$975M	\$1,418	\$2.118
Implementation	\$567M	\$847M	\$1.38	\$1.928	\$2.918	\$4.198
Hardware	\$70M	\$112M	\$13414	\$15514	\$171M	\$184M
Other	\$45M	\$77M	\$12644	\$172M	\$222M	\$267M
Total	\$1.798	\$2.878	\$4.458	\$6.728	\$9.758	\$13.68
Obstacted .						

Source Advanced Handacturing Street, St., Station

# THERE'S ALWAYS A BIGGER UNE AROUND THE CORNER

AMDAHL

#### Microsoft repository deal

CONTINUED FROM PAGE 45

IBM's OS/390

Oracle Corp. also offers a repository that runs on its own Oracle8 database. The agreement will help software developers who work on both decision-support system applications and enterprise

resource planning software because it will encourage vendors to adopt a uni form standard for where meta data eves and what it looks like, said Robert Craig, an analyst at The Hurwitz Group, Inc. in Framingham, Mass.

'What Microsoft and Platinum are doing is creating the foundation for shared meta data across applications," Craig said.

When applications share the same meta data, it eliminates the need for each application to keep a copy of each niece of data. By sharing uniform definitions, applications run more smoothly and data analysis is more precise. For example, without a repository, each application could refer to Robert P. Smith in a different way - Bob Smith, Robby Smith, Robert Smith, Robert Phillip Smith - and miss the fact that they

were referring to the same individual. "We've needed a meta-data standard," said Craig Bell, assistant vice president and manager of data resource management at NationsBank Corp. in Charlotte, N.C. 'And combining Microsoft's industry status with Platinum's position in data warehousing will bring us a lot clos-er to a de facto standard." More standards would make life significantly easi er for users with multiple repositories and computer-assisted software ensi-

neering tools, Bell added. NationsBank - the third-largest U.S. bank - recently built a data warehouse to improve information sharing among

Its more than 120 legacy syste Platinum and Microsoft also will work together on the next version of the Repository, which will be released some time next spring. Test edition, Repository 3.0, will include expanded modeling and tool support, scalability enhance menta and integrated enterprise security to protect corporate data stored in the Repository: O



NEW

VERITAS SOFTMARE CORP. has an-nounced a version of NetBackup for Windows NT Server, backup software for Pentium and Alpha systems run-ning Windows NT. According to the Mountain View,

Calif., company, the software now in-cludes a Windows interface that follows Microsoft Corp. standards. It supports online backups for Oracle? and Oracle8 databases from

Oracle Corp. as well as Microsoft Exchange and SQL databases. Support for Windows 98 clients also is The software costs \$3,995 per server and \$50 per client.

itas Soft (650) 335-8000

STARQUEST SOFTWARE, INC. has an nounced StarSQL 2.6, software that nects Windows-based applications with IBM DB2 databases

According to the Berkeley, Calif. company, StarSQL provides transfer of data from IBM databases on mainframe, midrange or Unix systems into Open Database Connectivity enabled PC applications, such as Mi-crosoft Corp.'s Excel, through either a

TCP/IP or SNA network. The software also has the ability to ange mainframe or AS/400 host

words from a PC. Pricing starts at \$3.995 for a license covering to concurrent users.

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# Briefs Intel mindful of FTC probe

May back PCI-X to thwart monopoly charge

By Jaikumar Vijayan and Stewart Deck

THE PROPERT TRADE COMMISston's ongoing scrutiny of Intel Corp. could influence how the chip maker reacts to a new bus technology standard announced by Hewlett-Packard Co., Compaq Computer Corp. and IBM.

Compaq last week announced an improved bus design that reportedly will double the rate at which information can be exchanged between a computer's processors and devices such as printers or hard disks [CW. Sept. 7]. Called PCI-X, the bus will

operate at speeds of 133 MHz compared with the 66 MHz of today's industry standard, the Peripheral Component Interconnect (PCI) technology PCI-X should mean faster Intel servers for users. But because of its potential to replace the Intel-spearheaded PCI as an industry standard, PCI-X could also cause a rift between Intel and the three PC vendors Sherry Garber, an analyst at Semico Research Co.

Phoenix, said the move by IBM.

#### HP extends backup line

 SureStor additions support larger systems centralized backup systems.

By Nancy Dillon

HEWLETT-PACKASD CO. last week ed additions to its SureStor tape backup line designed to support larger, more

A key new product for cen-tralization is SureStor Fibre Channel SCSI Bridge 2100 ER, which is due in January. The \$8,995 external bridge will let HP's 15-slot, SureStor digital linear tape (DLT) library connect to a Fibre Channel loop. It was designed to allow up to eight HP NetServer-series servers to

share one library The trend in backup is to connect multiple servers onto one bigger library," said Farid Neema, an analyst at Peripheral Concepts, Inc. in Santa Barbara, Calif. "Fibre (Channel) will give a big boost to this concept because it can extend over long tances Jup to so kilometers). He said SCSI's length restric-

tion of 25 meters makes such libraries difficult to create. Neema also said that because most libraries today are SCSIbased, people will have to use bridges to start linking libraries. He said full Fibre Channel libraries aren't due for about

other war HP also ann 718 and DLT Autoloader

What is PCI-X? A new bus technology developed by Compaq, IBM and HP.

Why is it important for users? Bus technologies greetly influence server speed.

What is the current standard? Peripheral Component Interconnect (PCI)

How is PCI-X better then PCI? PCI operates at 66 MHz. PCI-X operates at 133 MHz.

HP and Compaq "is an attempt Intel is reported to be work by these manufacturers to exert ing on a successor to PCI, their . . . freedom of choice." though no one knows when That's because, until now, it has that will start shipping. Intel been Intel that really controlled wouldn't comment on its plans. how PCI is implemented in

"Where Intel's visceral reac Intel page S2

#### PCI through the years

- Informer Viewen and Street Dec

## Snapshot

Worldwide	PC server shipmen	ts
Compaq Computer	114,660	145,625
Hewlett-Packard	51,890	70,640
IBM	44,070	52,260
Dell Computer	21,050	46,915
Digital Equipment	17,251	22,243
NEC	11,066	15,60
Acer America	13,010	14,310
Siemens/Nixdorf Information Systems	11,315	13,267
Pujitsu America	11,583	11,050
Gateway/ALR	6,080	8,250
Other	82,285	90,694
Total	384,260	490,855

#### Vicinity debuts mapping system for PalmPilot

By Yom Diederick LOST DELVERS no longer have to worry about pestering gas-station attendants for directions - as long as they are toting a

Vicinity Corp. has rolled out what it calls the first Internetbased map service tailor-mad for 3Com Corp.'s PalmPilot and Palm III handheld computers Before hitting the road PalmPilot users connect to the met via their PCs, visit Palo

Alto. Calif-based Vicinity's Pocket MapBlast Web site and input their starting points and destinations, according to a Vicinity spokesman.

ematted for the PalmPilot with software available on the site and is ready to be trans ted to the handheld device.

A spokesman for San Mateo Calif.-based AvantGo. Inc. which designed the freeware used to convert the maps for the PalmPilot - said a single download can lead drivers across town, across the state or across the country.

Although there is no zoom on for the PalmPilot version of the application, the image and-test directions are broken down into easy-to-follow sec tions that are accessed with the scroll bar, he said. [2]

#### Intel may back PCI-X bus

tion might have been to go after these guys, they might be advised now to hang back' in light of the FTC antitrust investion, said Robert Heller, a lawyer who mecializes in antitrust issues at the law rm Kramer, Levin, Naftalis & Frankel in

New York. "In Intel's assessment of the competitive world, they now have to keep in mind the fact that the government has its thumb on the scale.

Intel is under investigation by the FTC for possible antitrust violations and is

also the target of a private antitrust suit filed by Intergraph Corp. in Huntsville,

COUNTERATTACK COULD BACKFIRE As a result, "if Intel took some sort of pernicious action against the three ven-

dors because they want to create a future IPCII standard, that could potentially add still competitive and not monopolized, to the government's case," said Jonathan Funice, president of Illuminata, Inc., a

consultancy in Nashua, N.H. Instead, Intel might choose to cautiously endorse the new technology

when it is put before the PCI special interest group for approval as an industry standard, analysts said. Doing so might allow Intel to demonstrate to the FTC how the market is

Garber saud With PCI-X's higher speeds, HP, IBM and Compaq will finally have control over a piece of technology that will allow them to differentiate their servers - by offering things such as faster peripherals and disk drives - from mass volume servers based on Intel's proces-

sors and technologies, analysts said Meanwhile, if PCI-X is approved by the PCI special interest group, Intel could drop its own efforts to develop a ssor to PCI or continue to push it. said Dean McCarron, an analyst at Mer-

cury Research, Inc. in Scottsdale, Ariz.
"It's going to be up to Intel to decide whether there's going to be two standards or not," McCarron said. Following the announcement

PCI-X last week, an Intel spokesperson said the company must review the specification fully before it can "intelligently respond. D

#### **HP** expands line CONTINUED FROM PAGE SI

reStor DLT 701, both due Oct. 1. The 718 was designed for small or re-sote offices. It has one DLY 7000 drive. two fixed tape slots and six removable tape slots. Using all eight slots and asG byte DIT 7000 tapes, the \$11.405 unit

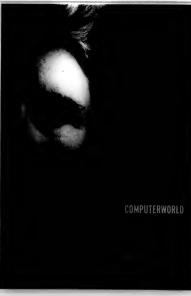
The yol is an internal DLT you drive for high-end, stand-alone servers. It costs

Market analysis firm Freeman Associates, Inc. in Santa Barbara, Calif., estimates that the automated DLT library market will grow by 47% a year through 2003. It found that 15,654 DLT libraries shipped worldwide last year, and 46,100 are expected to ship in 2002 D



NUMBER NINE VISUAL TECHNOLOGY CORP. has announced a 32M-byte version of its Revolution IV graph

According to the Lexington Mass., company, the high-end graphics card for Windows sysems is based on a 128-bit graph ics chip. It provides acceleration for a-D, 3-D and video and can support resolutions up to 1920 by 1200 pixels. It costs \$219. Number Nine Visual Techn



# The leaders in new technology

ViewSonic's "Short depth" CRTs put high performance in less space. ViewSonic\* proudly introduces the PS790.

the world's first 19" (18.0" viewable) short denth monitor

> The PS790 simultaneously upgrades and downsizes, providing extra screen real estate while taking up the desk space of a typical 15" (various viewable) monitor. But that's not all. A super fine 0.25 dot pitch and flicker-free resolution, as well as SuperClear" screen technology for a brighter image, provide superb, leading-edge level of performance.

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Not long 200, we introduced our first 17" (16.0" viewable) short depth monitor. The GS771 redefined sleek. Its compact footprint takes up less desktop space than a conventional 14" (various viewable) monitor. Like its space saving new PS790 sibling, the technologically innovative GS771 offers the kind of spectacular performance that runs in the family. Both of these brilliant monitors are PC and Mac\* compatible. Both are in full compliance with TCO '95, the world's strictest standards for low radiation, safety. power management and recyclability. Both feature the industry's best 3 year

warranty on CRT, parts and labor. And both are available with our exclusive 48-hour Express

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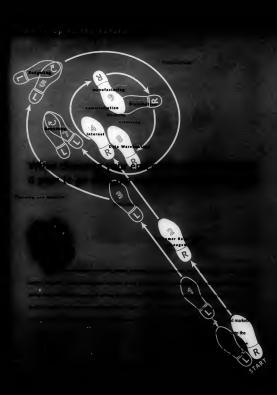












# **ERP:** The Next Stage

has surred a time, painful infancy — marked by eye. popung peoject beroups and a borrendous labor berouge — and looks like it's here to stay. Analysis say 70% of Festure Look imms have or will soon install ERF systems, which should boot the global

install ERP systems, which should boost the global ERP market from \$15 billion now to \$50 billion over the next five years.

Now that SAP, Baan, Oracle and the other ERP vendors have conquered most of corporate IS, where is this critical technology heading next? In this special report, Computer-

> world looks ahead at how users will put ERP to wock, vendors' plans for the future and career opportunities. We also ask whether ERP might be sowing the seeds of its own

S6 ERP'S EXPANDING UNIVERSE: At Manufacturers' Services, says Vor President John Walsha, BRP is the foundation of the merger strategy and the lifeblood of international customer archica. His company flustrates where users are taking ERP. from sustantially backwhere users are taking ERP. from sustantially backoffice and factory operations to supporting customers, decision-making and business strategies.

60 OUICKSTUDY: WHAT IS ERP? For those new to ERP, QuickStudy defines ERP and tells you what can make up an ERP system.

62 SOUNDOFF! IS ERP IN TROUBLE?
You bet it is! ERP can't support a real-world supply

chain, says Forrester Research's Bobby Cameron (right). Are you kidding? With 35%-plus market growth, ERP is here to stay, says Jim Shepherd at Advanced Manufacturing Research lockured at left).

64 OPINION: Stop obsessing about products. The IT industry, including ERP vendors, should focus on keeping promises, partner-ships, scalability and support, writes columnist Peter G. W. Keen.

66 VENDOR DIRECTIONS, USER WISH LISTS: The Big 5 ERP vendors are expanding the scope of their pschages and chasing after vertical industries, but they may be out of sync with users, such as Farmland's Dick Weaver, who want them to focus on func-

tional improvements in today's products.



ERP MEANS DOUGH-RE-Mit: Expertise in ERP is commanding high salaries. A year's experience can mean an annual salary of close to \$75,000, and people with three to five years in ERP work can command up to \$300,000 with the right consulting firm. FOLLOWS PAGE 68

AMR Research's Jim Shepherd: Customers' desires and vendors' offerings have converge OVERVIEW

# AN EXPANDING

ERP is growing from being just an efficiency tool to one that can also help a company grow

v Kathleen Melvmuka

anufacturers' Services Ltd. in Concord. Mass., is a \$900 million company that's grown dramatically through acquisitions in Europe, Asia and the U.S. It's using The Baan Co. software as the glue that keeps it all together.

"Traditionally, people have looked to ERP to run their basic operations," says John Walshe, vice president of information systems. "We want

Manufacturers' Services provides electronics manufacturing services. For example, a large computer vendor might sell point-of-sale systems to a large retailer with locations in several countries. The vendor then hires Manufacturers' Services to make and ship those systems to the

Its acquisition plan includes buying plants from customers, and because the plants initially have different systems and environments. Walshe is counting on Reston, Va.based Baan USA, Inc. to provide a "common language" for the company worldwide. His goal: improve service, especially for his international customers. With ERP, he says, "I can deal with you as a con

company, regardless of where your operation is." For example, Walshe says, if a customer sells cash resisters to a

ERP to be an integrator for the company."

costs

company in Europe and the U.S., ERP makes it easy to transfer design data and products from location to location and to leverage skills and resources worldwide, improving cus-tomer service. It also allows Manufacturers' Services to leverage volume purchases, lowering customer

Manufacturers' use of ERP to integrate the company is but one example of how the ERP universe is expanding on many levels. Where once it automated human resources, accounting and manufacturing, it

customer support and supply-chain management. Users' visions of ERP are evolving from tactical to strategic, and users are no longer forced to choose between integration and function. With new, add-on compo-

nents, they can have it all. Vendors, meanwhile, are expanding their target markets, focusing on smaller companies and working with independent software vendors to provide specialized, integrated components to complement their

The current market is estimated at about \$14.8 billion per year, with market penetration at about 20%, according to John Bermudez, an

Boston-based consulting firm. AMR expects the market to soar to \$52 billion by 2002.

#### OUTWARD FOCUS

Walshe's primary ERP objective is to provide a common company envi-ronment to serve customers on three continents. That type of use is increasingly common. \*Recently, there has been more of a focus on the customer and service side," says Bruce Bond, an analyst at Gartner Group, Inc. in Stamford, Conn. "You need to be better able to predict when you can actually deliver. you need to understand what is available, you need to understand customer history, you need better information about pricing — and you now have the ability to look at this

in an ERP product."
That evolution reflects a change in the outlook of American CEOs. says Andrew Zoldan, director of supply chain at SAP America, Inc. in suburban Philadelphia. Five years ago, he says, CEOs were concerned with profitability and the internal of ficiency that led to it. Today's CEOs are looking outward and driving for market share, which requires satis

offerings and broaden ERP's fying customer demand As a result, ERP vendors are ad dressing issues such as custor support, sales force automation, ad-vance planning and scheduling and decision support Supply-chain and customer rela

Industrial-Strength IP Connects Companies and Applications

#### BQM

# 

BQM. MODM. Measunge questing. Together, these terms describe a class of messaging technology intended to support interproces communities in loosely coupled distributed systems. Business quality messaging (BQM) captures on egol of this technology; to provide a business grade quality of service highly than what is found in ordinary messaging—high enough, in fact, to support mission—critical distributed processing.

rf Man what is burnil in ordinary messaging—migh renough, in fact, to support
on-critical distributed processing,
in April 1997, ATAT, Compac, IBM, Intel, Alicrosoft and other companies formed
the BQM Formus for concelerate and promote development of BQM products for enterprise applications. To date the Forum's most visible output has been functional
specifications for product introoperatings, and a multi-verder RQM service demon-

stration, both touched on later in this article.

Messaging-oriented middleware (MOM) broadly describes the technical means used to achieve BQM. It too has a support group, the Messaging Oriented Middleware Association (MOMA), whose mission is education, promotion and support of

MOM. MOM is architecturally quite similar to ordinary messaging; the differences lie in functionality and the quality of service delivered. Message queuing is the technology used to support transaction processing, a key application for BQM but not the only one. Message queuing was originally developed

as a means for managing transaction processing in monolithic mainframe applications; it found its way into MOM with the emergence of distributed transactions. This article will be of help to users of conventional messaging who want to

#### With a Little Help From Our Friends

understand BQM, where it came from, how its technology works, what it's good for, and how it may evolve Although the article looks closely at products from IBM and Microsoft, two of the major suppliers in this Industry, there are many other vendors and products. What follows is meant to be an overview, not a product comparison.

#### History of middlewan

Bigh has emerged in response to the corporate need for dustributed processing solutions. That need is a product of the evolutionary process through which the centralated computing centromment of the 1950s was transformed into the physically depressed enterorised environment of the 1980-900. During that transforment on, applications and data sources were physically depressed across the hardware base, creating a need to link once centralated but now discreased components.

By the 1980s, LNA and WAN technology, had a matured sufficiently to provide the communications. Foundation needed to support such applications. However, building the applications, proved difficult because of the third layer of infrastructure needed between the application components and the supporting network. This infrastructure had not only to move units of information reliably between linked applications, but also to mature or the properties of processing and guarantee or proper completion of distributed transactions.

proper completion of distributed transactions.

It became clear to vendors that this infrastructural 
"glue" was similar from one application to the next.

IBM initiated a research program on queuing and distributed fransactions, which led to the emergence of its MQSeries product line about five years ago. MQSeries pre-packages all the machinery needed between a celllection of linked applications and the underlying net-

The key selling point for such middleware is that it fines an application developer from all spectics of physical distribution. The developer must be aware of the logical partitioning of an application into processing modules, and of the information flows between those modules, but need not be concerned with the locations of the modules. Middleware provides transparent support for the physical distribution of the processing elements and for any subsequent rearrangement.

works. Hence the term "middleware"

The applications to be supported by such products share three characteristics.

snare inree characteristics.

 They are loosely coupled, meaning that individual software components are not permanently bound together in a single, dedicated system. Some components, such as data resources, may serve many pur-

poses and participate, at different times, in multiple distributed solutions.

2) Within a single application, the components may be subject to different schedules. Some may run continuously, others in hatch mode at possibly different

pre-scheduled intervals.

3) The supporting infrastructure may be unreliable.

individual platiorms may be provided by PCs. Taptops, workstations, servers and mainframes, built and operaced to widely differing reliability standards. Interconnecting the physical elements may require a variety of networks, from intrinsically reliable LANs to corporate intranets to the internet isself.

Together, these requirements demand a solution that is imminisally asynchronisa and persistent. Asynchronical that is imminisally asynchronical and persistent asynchronical in the action of the synchronical interview of the synchronical interview of the synchronical interview of the causes Persistent in that the communications medium must ensure delivery of the communication in the face of arbitrary delays while failures are cleared up or processing schedules play out.

Store- and- forward messaging lends itself to this situation because its core properties are precisely flosse needed. It achieves the necessary synchronium and persistence by combining storage with the physical movement of information. Store- and-foeward messaging was originally designed for communication among human benigs—notonously asynchronous objects and over unrelable networks such as the internet.

Although BQM exhibits the asynchronous character of conventional messaging, it requires a much higher quality of service, for example, it wouldn'd do to run mission-critical applications over an SMTP message system. Although each server exercises care in moving traffic to the next, the overall quality of service (QSD) is not up to the task. One of BQM's contributions is to

add machinery to messaging that raises it to a much higher level of service quality.

MOM can be thought of as merging two once distinct technologies, messaging and queuing. Queuing technology goes back to transaction processing systems, developed in the 1960s to support applications such as airline reservations that were subject to real-COMPONENTS OF A MESSAGE QUEUING SYSTEM

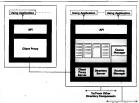
time streams of incoming data. IBM's CICS is an example of an early transaction processing system. In such systems, queuing technology provided the buffering and control mechanism needed to support orderly and properly sequenced transaction flows between individual processing elements

By combining it with messaging, BQM maps the principal elements of queuing technology from the mainframe environment in which it originated to the distributed environment

of today. In so doing, it upholds the stringent quality of service needed in traditional transaction processing

with one major exception. That excep-'tion is the guarantee of realtime or near realtime execution, a

requirement that can be met where BQM runs on a dedicated, high bandwidth system, but not in the ordinary computing environment in fact, the whole point of BQM is to support trahsaction processing within envi-





widely in their speed and quality.

In BGM, complex transactions may play out over arbitrary time periods depending on the availability of individual components, but, however long it may take, the information flows between those elements are ensured to a high degree of reliability, and the logical sequencing of events is rigorously maintained. BGM couples the tight control discipline of queuing technology with the asynchronous character of messaging.

#### Technology of BOM

Fig. 1 (p. 5) shows the principal components of a message queuing system. The following descriptions emphasize the similarities and differences between BQM and conventional messaging.

A message queuing server provides message routing and storage services, in conventional messaging terms it combines the functions of a message switch or mail server and a mailbox server.

Within the server, the routing manager handles all aspects of message routing and drives the underlying communications layer(s) to move traffic to and from other servers. In so doing it exercises a protocol courvalent to P1 or SMTP but more complex, and at this

point not standardized across products.

The aucue manager is equivalent to the processing element in a mathor server.

Assage quases are equivalent to mailboxes but treated more freely. Message queues provide input buffers for application components, which can establish such queues as needed. An application component can create multiple queues, and several components can share a

single queue, for example, to support load balancing.
Message queues normally support a first-in firstout FIFIO discipline, but, depending on the product,
may also support extraction by priority or by specific
identifier. The removal of a message from a queue can
be destructive (cut) or non-destructive (comy).

The API provides operations required for interaction between the client application and queuing system, principally for dispatching messages and extracting inbound messages from local queues. Also included in the API are operations for creating and removing queues. The calls available on the API factor out all aspects of the physical environment and the distribution of aepication elements across that environ-

#### The Business Value of Networked Computing

ronment. Queues and other objects are referenced by name; the BQM software assumes all responsibility for mapping names to physical locations and for driving the underlying transport facilities.

The diversity server provides access to a system-wide directory, which serves primarily to support name-to-address mapping. This frees the application developer from any concern with the location of a queue, and also allows applications to be physically redistributed without distripting their internal communications.

The client proxy server is a protocol driver that makes it possible to remote the API onto a physically separate client machine.

Fig. 2 (p. 6) shows the flow of information through a message queuing system.

Messages and routing

a messige queuing system Message routing. Store-and-forward transfer is used to more messages from sending applications to recipient queues. There are no surprises here, but the techniques used to ensure reliable transfer are one of the key distinctions between BQM and conventional messaging. Message antiferasing. Messages, are addresser, are addresser, are addresser, are addresser, and and the store of the property of the

named recipient queues, with the directory providing mapping from names to physical locations.

Message structure. BQM messages exhibit the familiar header-body structure of conventional messaging. The header contains addressing and control fields, which may include identifiers placed there by the application. The body may contain any application data, but

there are no standards equivalent to MIME or SMIME for internal body structure Scounty, BOM offers security safeguards which are

the equivalent to those available in conventional messaging. These safeguards are either integrated into the product or available as external services.

#### ality of service

BQM departs most from conventional messaging in its QOS guarantees and the machinery that supports them. Some of these are listed below.

Assund adivey. Much effort is exerted to ensure that each message is delivered undamaged in spite of system failures, which may be both senous and permanent. This means more than just recovering from network outges. In this respect, BOM goze much further than conventional message systems, whether sandards-based or proprieture.

Just once delivery. If in doubt about the fate of a message. It is not acceptable just to "fry again" to deliver it. For many applications, a doubte-delivered message can be just as destructive as a non-delivered message. BQM products ensure that messages are reliably deliv-

Sequenced delivery. Many applications require accurate sequencing in the information flows between processing elements. This means that messages must be placed in delivery queues in the order sent, not the order received into the destination server. This must be ensured even when messages pass one another in transit due to route changes or other causes.

All of this suggests an end-so-red occrers in the message transite recover over the fast of each message, well beyond the "level of concern" present in ordinary message. The med-so-red occore—implemented by stringent message transient procession—in the contract of EASH 10.55. The thoray is that if you have pre-cus insovidege about the states of a message, touch concern most of the problem that may since. This is not written to the contract most of the problem that may since. This is not written to the contraction of the problem that may since this is not written to the contraction of the problem that may since this is not written to the contraction of the contraction of

 System-level acknowledgements between servers and end to end across the entire path.

Extensive logging and journalizing, plus the ability
of routing agents to re-send journalized messages
based on timeouse or negative acknowledgements.
(Note that these functions make use of inter-server
notification messages and extensive use of administrarive queues—the same machinery that superoists the

payload of the system.)

• Sequence stamping and message identification to prevent duplicate or out of sequence delivery.

 Sliding window protocols for the retransmission of messages.

Combine these and the result is analogous to TCP vs.

IP. BQM adds to messaging something like the QOS that TCP adds to IP. In IP. the Internet moves packets on a

ered, but never delivered twice

#### IBM MQSeries: **BQM At Work**

"best efforts" basis. TCP adds machinery to IP that

ensures reliable, in-sequence delivery of all nackets sent. But there are two caveats. The first is that all of this comes at a cost-in processing, storage and communication resources required for the QOS machinery. and, due to their greater complexity, in the products themselves. To ameliorate the first of these costs, products typically allow users to select from two or more grades of service, with the lower grades calling into play less of the QOS machinery.

The second caveat is that nothing is completely safe. If the entire system falls permanently, there is no recourse. To that end, the designs of these systems acknowledge that failure can occur, even with the most stringent QOS provisions. To accommodate failures that cannot be overcome automatically, these systems provide for manual intervention with system-wide management capabilities, "dead letter" queues and related mechanisms.

For many applications, the reliable transfer and queuing machinery of BQM provide all the middleware support needed. However, BOM is intended to go beyond this and support applications requiring transactions, which, though distributed in time and snace. must be treated as atomic events. Such a transaction may include multiple component operations including sending and receiving messages, updating data resources and the like. Their governing characteristic is

that they cannot be permitted to partially succeed. Total success is the desired outcome, but if any operation within such a transaction cannot succeed, then the entire transaction must be aborted as if it had never been initiated. That means that all component overa-

tions must be undone or "backed out."

An example is a funds transfer between two accounts. From the requester's point of year this is a single transaction, but intendily it will require at least two components, a debit to one account and a credit to

accounts. From the requester's point of view this is a single transaction, but internally it will require at least two components, a debit to one account and a credit to the other. Unless both operations succeed, the overall system will be left in a confused state likely to require expensive human intervention. Thus, if the debit operation succeeds but the credit fails, the debit must be reversed to restore the system to a "clean" state. The transaction can then be tried again. In practice even such a simple transaction may

in practice even such a simple transaction may involve a considerable number of internal operations, and if the supporting communications are provided by a message queuing system, everal of those operations will involve the manipulation of messages and queues, and all must be hacked out in the case of partial failure. Thus the message system must be fully engaged in

and all must be backed out in the case of partial failure. Thus the message system must be fully engaged in the overall transaction environment. To support this kind of operation, BQM vendors have made it possible to interface their products with trans-

MANAGING DISTRIBUTED TRANSACTIONS



#### Raising the Bar for E-Commerce Solutions

action management systems, yielding the architecture in Fig. 3 (p. 10). The transaction management system is itself distributed across the same hardware environment as the message system. It comprises a network of peer transaction managers that collaborate so as to coordinate among the components of each distributed transaction. This requires a two-way flow of information and control between the transaction managers and the software elements actually performing the work, including elements of the message queuing system. In particular, active software elements initiate transactions and report progress to their respective transaction managers. The latter, in turn, ensure that the transaction as a whole moves through the phases necessary for orderly completion and, if necessary, signals each element to undo the component operations it has performed.

#### Summer

Described above is a message technology similar to conventional messaging at the architectural level, but with additional engineering designed to provide a reliable platform for distributed applications. It is these provisions and the resulting service that make BQM unique, and give it great future promise. The three principal departures from ordinary messaging are:

O The industrial-strength precision and reliability of BQM sprvice as realized with stringent QOS machinery and built-in system-wade management.

The direct involvement of the message systems in the semantics of the application through the ability of intح

processing modules to create and utilize message queues as needed to suit the requirements of their interactions with other modules.

 The ability to interface the message queuing system to transaction management solutions where atomic, unit-of-work transactions must be supported across a distributed environment.

#### State of the industry

Steve Cragge of Candid Corp. In major 1884 ISV and suppher of BQM-related products) asys that 1 997 sales for core BQM solutions were \$16 or million and forecasts \$250 million in sales for 1998. Extrapolating that \$6% 1997–89 growth rate gets us to about \$450 million for 1999, \$600 million for 2000 and \$900 million for 2001, figures that are consistent with a high-potential indusry entering the rapid growth phase of its filecycle

Apprecia (MAY AUGENES product India vin Machine John of the market, and Mild claims about 5.000 coutomers to date for AUGENES. MILD has seen the postertion of the market, and the best production across the heterogeneous environment that is a lact of life in most proparations. AUGENES is a shalled on and enroperation and the production of the production of the AUGENES of the MILD of the AUGENES of the AUGENES of the MILD of the AUGENES of the AUGENES of the AUGENES of the MILD of the AUGENES of the AUGENES of the AUGENES of the MILD of the AUGENES of the AUGENES of the AUGENES of the MILD of the AUGENES of the AUGENES of the AUGENES of the MILD of the AUGENES of the AUGENES of the AUGENES of the MILD of the AUGENES of the AUGENES of the AUGENES of the MILD of the AUGENES of the AUGENES of the AUGENES of the AUGENES of the MILD of the AUGENES of the AUGENES of the AUGENES of the AUGENES of the MILD of the AUGENES OF other vendors of core and/or related BQM products. There are no industry standards in the sense of SMTP/MIME. However, the BQM Forum was founded in 1997, as Mark Smith of Intel puts it, "to forestall the API wars" that disrupted mainstream messaging in the early 1990s. As a first step, the Forum has released a "functional standard" for interworking between products. The intent is to foster sufficiently consistent functionality that gateway/bridging can be accomplished Whether that standard will hold up in the face of continued technical evolution is in question, as is the eventual development of a complete standard. However, the complexity of BQM suggests that it may remain in the bridging stage for some time. For this reason, bridging products are a rapidly growing part of the industry. Vendors of such products include Candle Corp. and Level B Systems, whose products are promi-

nent in the Microsoft Interature (EQA) has received the point where it is of interest to users to interconnect their systems and thus create startified processing solutions on an intercognizate scale. This promising development is, In effect, a new generation of electronic data interchange (EOI) that could support continuous transaction flows between corporations. An eye to do the is through their party service providers who would provide butlering and dependent of the providers who would provide butlering and a switching point where multiple players are involved, much as the EOI service missing remegrad in the exity (1906).

To promote such a development, the BQM Forum

#### Microsoft

#### Easier Development of Business Applications

has draited a service provider specification similar to the functional standard cited above. Earlier this year," the Forum demonstrated a prototype ATOT BQM service in which users running SAP R/3 applications and caupped with MCBertiss on NT servers sechanged data through an ATOT in retwork based on SMISM\_ATOT has indicated that it intends to provide regular commercial service based on BQM technology.

Analysis

What is BQM good for? The intended target can be characterized as follows:

 Transaction processing of all types. Given a qualityand tightly managed hardware environment, Body can support, in distributed fashion, the fast transaction processing needed in applications such as credit card validation or securities markets. IRQM is also often used, for the case of development it supports, in traditional centralized transaction processing.

in transitional cerimater transaction processing, Applications after require coordinated processing but can tolerate the delays and interruptions of the typical distributed environment. Perhaps 8QM's key strength is its allity to support transaction and other critical applications in a general-purpose environment where high service levels cannot be guaranteed by the hardware or communications subsystems.

Event-driven applications where information transfers cannot be pre-scheduled.

 Applications distributed across heterogeneous platforms, but only to the extent that multi-platform

A COMPUTERWOOLD CUSTOM PUBLICATION

products or truly effective bridging solutions are available.

• Legacy applications. According to Cragge at Candle.

 Legacy applications: According to Cragge at Candle, this is currently a principal use for BQM BQM makes it possible with minimal just to transform a set of separate batch applications into a single distributed solution. Some examples include:

Order entry/processing where multiple resources are called into play, but where fulfillment is not expected to occur in realisme.

Back-end support for Web-based applications in

#### electronic commerce. WORKFLOW AND BOM

Guin Engan v. in Washiban Management

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M. G. M.

Banking applications where transaction completion can and does take place at slower than realtime speeds. The SWIFT interbank organization is looking at BDM for its next energation network.

#### Future ap

Even though BQM was aimed at specific applications does not mean that it cannot be used elsewhere. To begin with, the ready-made infrastructure and high

e service quality provided by BQM could make it attractive for applications at the high-speed end or love. Speed batch end of the spectrum for example, BQM could provide an attractive platform for EDI Workflow may benefit see IBM's Colin Osborne notes that a rules engine or workflow manager could drive a

MOM environment, resulting in the architecture of Fig. 4. Not so strange when one realizes that workflow is reality distributed transactions with humans in the loopoff it looks like e-mail and quacks like e-mail, but sounds better, what is it? Can you do plain vanilla mes-

saging over BQM\* Could you, for example, move MME traffic through a BQM environment? Using ordinary chents? The answer is yes, with adoptation in some cases, but the adaptation should be minimal. For example, MSMQC an ber un as a MMP accessible service. That means you could use ordinary mad clients in pith in ow with MSMQ. Petc Houston of

Microsoft points out that MAPI doesn't support distributed transcrients, and that in any case MSMQ, is not intended as a substitute for Exchange. We would expect a similar answer from 18M with regard to MQSenes vs. Notes Mail.

But wouldn't a corporation moving increasingly, important traffic electronically be interested in PQMI. We're in a progression in messaging, suggested by Fig. 5, from "lath's Adv." rest-only traffic toward the move-

ment of objects, which, because of their size, come. plexity and business importance, can be considered the "heavy" Heavy-duty messaging will continue to

### HEAVY DUTY MESSAGING

Market Market Parket Pa

become attractive to the business community, as the building blocks are put in place to make it feasible.

We expect the demand for truly industrial strength, solutions to increase. This could be viewed as putting in obtained to increase. This could be viewed as putting in the vendors in a classic 'cannibal' different. Selling long body and the selling body in the future greating of flower by products. This is not to say that today's messaging products are bad, just this IRQM provisions of the properties the selling products are bad, just this IRQM provisions of the selling products are bad, just this IRQM provisions of the selling products are bad, just this IRQM provisions of the selling products are bad, just this IRQM provisions of the selling products are bad, just this IRQM provisions of the selling products are bad, just this IRQM provisions of the selling products are bad, just this IRQM provisions of the selling products are bad, just this IRQM provisions of the selling products are bad, just this IRQM provisions of the selling provisions o

ing something even better.

In fact, with the benefit of hindsight, it's amazing this hasn't happened sooner. How could we have tolerated for so many years the QOS provided by SMTP (or even the somewhat more robust PI protector of X-000)! Rither standard provides anything like the end-to-end

guarantees of BQM. Most likely the answer lies in the casual back-door route, through which messaging first found its way into the corporate environment.

That brings up the issue of public ental on the interment. There are obvious cost and logistic occerns in the way of a widespread segrated. On the other man, we have also allowed to the other wides a wide and the state as they have a formational users with other textus as high as 4% for internet messaging trails. Thin may be storable to internet messaging trails: Thin may be storable to internet main as also used widely for intercorporate and a state of the other of these conditionates can better tailure rates at those levels in the mountain of the other of these conditionates can better failure rates at those levels in the mountain of the other of these conditionates are better described outcome, amospised by the ATMF demonstration, would be the intergence of a two terred service, with bouriness class messaging for the business community and c

About the surface.

In the surface of the surface o

### BUSINESS QUALITY MESSAGING

### Industrial-Strangth IP to Connect Applications and Companies

Business Quality Messaging (BQM) is mes- enterprise applications, Today BQM technolsage queuing technology that allows com- ogy is found in products from IBM, Microsoft marcial, off-the-shelf applications to and nearly a dozan other vendors. axchange information reliably over corporata networks. Specifically, BQM provides a Join the BQM Forum. The BQM Forum is the business-grade quality of service that is con-

messaging-oriented middleware for voluma www.bgm.org.

cessing.

focal point for system integrators, corporate siderably higher than what is found in ordi- IT developers, ISVs, VANs and ISPs who use nary massaging, and is in fact high enough messaga quauing technology to intagrata to support mission-critical distributed pro- applications. The Forum meets quarterly and also will participate in savaral shows in 1998-99. Saveral Forum mambers have begun to The BQM Forum was founded in April 1997 showcase their BQM-enabled solutions. Visit by AT&T, Compag, IBM, Intal, Microsoft and the BQM events calendar to register for an other companies to develop and promote upcoming event or get more information:





### Streamlining the Data Warehousing Process with

By Henry Morris International Data Corp

### Data Warehousing as a Process

Data warehousing is a process that organizes time-based data coming from multiple applications according to subjects meaningful to decision makers in a business, IDC measures the maket for data warehousing software tools at \$2.5 billion in 1997, and forecasts the market to grow to over \$8 billion by the year 2002. There are two obvious reasons for this growth:

Businesses are investing in data warehousing because access to accurate information is a competitive necessity. Data warehouses make information available to business users in a form that is easier for them to understand and more rapidly act upon.

T is investing in data warehousing software-tools in order to automate the steps in the data warehousing process, thereby reducing the time and risk of implementation.

### IDC divides the data warehousing process into three phases: warehouse generation, warehouse management and information access (Fig. 1). So far, data warehousing tools have automated tasks in owr of these three phases:

### . Warehouse generation

Data from one or more production applications or external sources must be mapped to a unified model designed for the data warehouse. Software tools automate the design, extraction, cleansing, transformation and loading operations.

### Warehouse management

Data is stored in a form optimized for user access, in a relational and/or multi-dimensional database, Software tools support storing the data, tracking the type and volume of access, managing multiple user views and queries, tuning the database for performance and ensuring its availability.

### Information access

Data is accessed by end users according to a business level view of the information. Software tools support a range of access for different levels of users from query and reporting to multi-dimensional analysis.

Populating the warehouse and ensuring performance of the warehouse to meet user needs are the main challenges for IT managers in implementing and maintaining a data warehouse. Difficulties in implementing

Source International Data Corp., 1998

data warehouses stem from the difficulty in linking the tools used to automate the steps of the process (moving/transforming data to the warehouse, managing the data and accessing the data). Across all these steps, consistent data definitions or metadata must be maintained. One approach-automating the process via packaged data marts-has the potential to reduce the risks and time of data warehouse implementations (a concept first presented by IDC in a 1997 bulletin, Packaging the Data Mart: The Application-Centered Data Watchoose Emerges

### Packaged Data Marts

A packaged data mart is an integrated software product that brings together software tools to automate multiple phases of the data warehouse process. More than a bundle of products, a packaged data mart integrates the flow of data from one tool to another, from one task to another. The latest packaged data marts integrate tasks across the three phases of warehouse generation, warehouse management and information access

Customers who purchase packaged data marts are able to rely on a single vendor for the integration of software components, rather than performing the task inhouse. The benefit increases in time, as the vendor takes responsibility for providing new releases of the integrated whole, rather than leaving the customer to separate products from multiple

vendors. This packaging and integration concept can be taken a step further when the integrated toolset is given an application focus. A packared data mart can be enhanced to incorporate content, i.e., models specific to an application area such as HR or marketing. An application-specific packaged data mart is a collaborative effort between the provider of an integrated toolset

and an application company with specialized domain expertise. Will IT buyers accept packaged data marts? Packaged data marts are relatively new to the marketplace, and IDC sought to measure the potential demand for these packages. In a recent survey, IDC asked over 800 IT managers in

the U.S. about their interest in

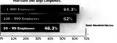
packaged data warehousing solutions organized around strategic applications. The response was strong among all companies, but especially among medium-sized to large companies where the adoption of data warehousing is highest (Fig 2). Organizations that have directly experienced the complexity of the data warehousing implementation process appreciate the value of integrated solutions that automate tasks across that process.

Packaged data marts offer many benefits, but there are also risks. If a business introduces a successful data mart (to meet the needs of a department or specific application), there will be interest in tackling an additional problem with a second data mart. This is a critical point. Common concepts and business dimensions across the marts must be defined in a consistent way and kept in a single physical or logical metadata store. Ideally, the broad outlines of the dimensional model are established at the beginning of the process as part of the initial data mart imple-

coordinate separate releases of

ldwide research firm headquartered in Framingham, Mass. He has written extensively on ishin ha sing the della analytic applications market, and the fole of closed loop systems. Dr. Morris analyses the on and vertical wavehouse. He can be reached at hynomistivic.com.

Figure 2. A survey of over 800 IT managers revealed that interest in packaged data warehousing solutions is strongest among mid-sized and large companies.



mentation. Careful planning, usually with the help of consultants, is vital in bringing discipline to this design and modeling process.

Although different organizations may have different initial objectives for data warehousing, the end products (enterprise data warehouse and data marts) are complementary. Over time, organizations will implement both enterprise warehouses and user group-specific data marts. More organizations today are proceeding bottom-up (from marts to an enterprise warehouse) than top-down (from an enterprise warehouse to data marts).

### Return on Investment and Data Marts

Can packaged data marts bring more rapid return to organizations moving to data warehousing? There are two important ways in which packaged data marts reduce complexity, contributing to more rapid return.

Packaged data marts: The data mart approach, responding to a specific business imperative, provides a clear target for the initial data warehousing implementation.

Too many IT projects suffer from "scope creep," lengthening implementation cycles and increasing the risk of failure. IDC's Foundations of Wisdom: A Study of the Financial Impact of Data Warehousing found that organizations that focused initially on building a single subject, "discrete" data warehouse (essentially a data mart) paid back the investment in 0.94 years. The contrasting "enterprise" approach, where organizations initially built a broad data warehouse in support of a range of business processes and user constituencies, had a payback period that was twice as long - 1.91 years.

Packaged data marts: There is value in the integration provided by integrating tools that support tasks across the data warehousing process.

When the IDC financial impact study was done (1996), packaged data marts had not yet come on the market. Due to their reduced scope, data marts are more amenable to packaging than enterprise warehouses. The same study showed that the initial and ongoing 3-year costs for the discrete approach were only slightly lower than the enterprise approach. Packaged data marts, in which a single vendor takes responsibility for tool integration, have the potential to drive down implementation costs significantly, further - and substantially - improving return on investment.

Conclusion Data warehousing is a process whose goal is to provide better access to business information, meeting the needs of decision makers. Packaged data marts streamline the data warehousing process, integrating tools in support of multiple tasks: from warehouse generation to warehouse management to information access. Organizations stand to benefit by reducing the risk and potentially the cost of data warehousing implementation.

### Packaged Data Marts

Sagent Technology provides package data mart offerings for organizations that worst to "build" their own solutions, as well as for organizations looking to "buy" solutions. For the "build" option, Sagant offers a combination of best-of-breed products and comprehensive services to speed the implementation time for deploying data mart-based applications to the Web. Secret's products deliver capabilities for building data morts, as well as giving end users Web access to data. Segent's professional services deliver the vical expertise needed to successfully implement Star Scheme-based data morts. For those organizations looking to "buy" packaged data morts, Sagant trams with leading application vendors to deliver used solutions. Sagent's partners include Sebel Systems for sales and marketing, ADP for human resources end Advent Software for portfolio management. Each of these partners uses Sagert's products to load operational data into a pre-defined data mort and then deliver data to and users for more effective decision making.

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# UNIVERSE

newest mantras," Bermudez says. "That includes sales force automation, customer support, call centers and field service. There's even Web site management making the most of the people who visit your Web site by tracking what they look at.

ERP is going to be very successful here."

As ERP targets outward-looking processes, customers are evolving along with it. Datex-Ohmeda, for example, bought MFG/ PRO from OAD, Inc. in Carointeria, Calif. in 1990 simply to replace a variety of aging, high-maintenance systems in factories and distribution centers around the world. "We were looking at something broken and trying to fix it," says Tim Wing, information technology director at the billion-dollar in-

But MFG/PRO facilitated the evolution of Datex's manufacturing systems from traditional to just-in-time processes, and that started an evolution to other outwardlooking processes. "We began to get a little clever about how to perform true enterprise activities," Wing says, "so a sales order in one country would move to a plant in an other for shipment to another." Now the ERP system supports internal processes such as manufacturing and finance, as well as outward-looking processes such as sales, order processing, distribution, field service, global supply chain and quality control. The system is now pervasive throughout the business," Wing says.

### MARKET FOCUS

About 18 months ago, Atco Rubber Prod ucts, Inc., a \$150 million manufacturer in Fort Worth, Texas, implemented ERP software for financials and distribution man-agement from Platinum Technology, Inc. in akbrook Terrace, III. The norm for smaller

# Manufacturers' Services Vice President John Walshe: "We want ERP to be an integrator."

nies at the time was to go with smaller vendors, and Paul Evans, manager of information and planning, says he didn't give much thought to the bigger players, mostly because "they're a lot more expensive." But today, Atco might be courted by SAP, Baan and PeopleSoft, Inc. Big vendors are moving into the midlevel and lower-midlevel market of companies with annual revenues of less than \$250 million, and they're cutting deals to make their products more affordable, says Trisha Tubbs, manager of SoftResources LLC, a Seattle consulting firm. "I've seen Baan moving down to a company with \$15 million in revenues," she says. "And PeopleSoft actually is pricing according to customer revenues to get down

to smaller companies." A look at SAP's World Wide Web site confirms this. "It's not size that defines our customers," declares a banner atop the home page, followed by descriptions of cus-tomers in the \$150 million to \$400 million range. "It's success," the kicker reads

In the past, large companies sometimes boiled together combinations of ERP prod-ucts from different vendors. Although

# Facts, figures & functions

### Status check

ment Group surveyed 102 IT ng to use ERP

e es% are in the

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GREATEST CHALLENGES IN AN ERP	PROJECT!	
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# Facts, figures & functions

### SEMINAR



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Implementing Base IV By Yves Perreault and Tom Vlasic (Que Education and Training, New York; 1998) mcp.com/mcp

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y Nancy H. Bancroft, Hen-ing Seip and Andrea Sprenntice Hall Pronal Technical Refe er Saddle River, N.J.;

# AN EXPANDING UNIVERSE

Bermudez says he doesn't think that ever was a "conscious plan, big corporations put in packaged financial systems first because there was a higher degree of standardization among financial users than manufacturing users Later, they added different ERP systems for manufacturing. Other companies grew by acqui-sition and bolted the ERP systems together, he says. But today, there is a strong

trend toward using just a single ERP vendor "We're seeing a strong drive to make one vendor the primary vendor," agrees Byron Miller,

vice president of Giga Information Group in Cambridge, Mass. Some businesses are becoming very, very dogmatic in taking this approach.

The one-vendor approach was essential for Manufacturers' Services. \*Our strategy was to have one ERP for the entire com parry." Walshe says. Otherwise. he'd never get the "common view\* necessary to serve cus-tomers efficiently

FORMITY IS OUT Users are more likely to have a primary ERP vendor, but they're less likely to accept the demand that all their processes conform to the ERP model. When Andy Hafer, technology chief at Hydro Agri North America, Inc., impl mented SAP's R/s in 1994, he began a years-long struggle for alignment. 'We've been fighting against the integration SAP provides because some of our business processes don't match up,"

But trying to change Hydro Agri's processes to fit the SAP mold has brought a lot of pain and fewer benefits to the \$800 million Tampa, Fla. based agri-cultural products manufacturer. Hafer says. Recently, he's come to a new understanding. "We're finally realizing that SAP is not

going to fit every single in stance," he says. When Hydro Agri's processes clash with SAP's, "we'll build a different front end or bolt on a different type of package," Hafer says That's getting easier by the day because of the recent boom in add-ons or bolt-ons, which are

specialty software components that fill the gaps where particular vertical markets or compa nies have processes that don't fit the ERP common denominator. There's a whole new industry of SAP partners," Hafer says. You can almost find something for anything. I want to use SAF as an infrastructure and backbone and attach other [bolt-on] appendages."

terfaced it to PeopleSoft, and it's working very well.\*

The big issue with add-ons is the extent to which they are preintegrated with your ERP system. Some come with most of the integration work already done, SAP and Oracle, for example, have partner programs that provide certified, preintegrated add-ons, says Scott Lundstrom, an analyst at AMR. Those are pretty easy to plug in," he says

**Bolt-ons are expanding** the ERP universe faster than the big vendors could do it alone.

ERP universe faster than the big vendors could do it alone. Charlie Lacefield, vice president of business process and informa tion technology at Dow Corning Corp., a 50/50 venture between Dow Chemical and Corning, Inc. in Midland. Mich., is using the total suite of SAP R/1 but also is looking at enterprise relationship management add-ons from Siebel Systems, Inc. in San

"Those are management and decision-support systems." Lace-field says. For example, one helps executives determine whether to move forward on new products or opportunities for business expansion. "It's going to take both [transactional

and analytical capabilities! to do a really top-notch job in leading a corporation," he says On the other hand, Corning

Corp. is using third-party prod-ucts to address unique but nonmission-critical processes such as time and attendance. "Corning has a complex union envimnment with complex pay rules," explains Steve Cooper director of enterprise systems at the Corning, N.Y., specialty-glass maker. "We needed a little more sophistication and function, so we acquired the product and in-

Still, says Miller, "We do not have anything that approaches a

plug-and-play system." Other modules truly are boit ons, requiring a great deal of in-tegration work. \*Depending on the application, it can be a pretty hie deal." Lundstrom says.

NOW'S ERP What does ERP's future look like? It will probably include the

· Single backbones with add-on components from vendors and their partners. · Attention to processes that

don't fit the common mold · A focus on outward-looking processes such as customer sup port and analytical processes such as decision support. · A vendor focus on smaller

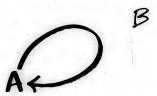
Technology, customer business strategy and vendor marketing all seem to be converging on one goal: expanding the ERP universe. The mandate that

CIOs are giving leading ERP vendoes is that we're committed to you as a single vendor, Bermudez says. \*Now we want you to do everything." [2] Melymuka is Computerworld's

senior editor, management.



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# **ERP**

DEFINITION: Enterprise resource planning (ERP) software is a set of applications that automate menufacturers handle jobs such as order processing and production scheduling. ERP systems such as SAP AG's R/3 are notoriously complex, and installing the

tware often forces users to change their internal cesses. ERP vendors are branching out into appli cations such as supply-chain management and sales force automation, but whether those functions fit un-der the ERP banner is debatable.

**Manufacturing and Logistics** 

# Facts, figures & resources

# Related ERP

terms

Activities based costing -A form of accounting that tries to quantify the true cost of each part of a business process. For manufacturers, it could be an alternative to

em in stock. Its p

ping the operations of facturing such as distri-meduling and

# CONCEIVABLE COMPONENTS FOR ERP SYSTEMS

geted by ERP vendors

New applications

Transaction Engine





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SOUNDOFF

Of course it is. By Bobby Cameron

t isn't that the big vendors will die or that all their products no longer meet users' needs. The problem comes when manufac-

turing companies expect their investments in enterprise resource planning (ERP) suites to set them

up to attack new markets and business opportunities, such as Internet commerce. They dream of systems that improve their coordination across internal activities, suppliers and customers - with big payoffs in efficiency and competitive position. Guess what? ERP fails far short of those expectations, regardless of the

big vendors' marketing claims. ERP suites excel at combining financial control with multiplant manufacturing coordination, but users need more to realize their dreams. They need extended supply-chain planning and flexible execution that can implement one business process today but change rapidly to handle tomorrow's

new models. ERP's main functional weakness is in the planning functions - master production scheduling and manufacturing resource planning (MRP) modules that decide how and when to respond to customer demand with available resources. The modules can't support a real-world supply chain. They deliver the following: Transactions — without responsive-ness. Responding to changes in demand, supply, available labor or ma chine capacity requires quick thinking, which isn't ERP's forte. Plant schedulers and planners make those decisions in their heads or resort to spreadsheets and the backs of envelopes. Based on incomplete

analysis, they commit the plant to unrealistic customer shipment dates, which results in unreliable promises and annoyed customers. Production focus — without under standing demand. ERP systems treat demand forecasts as external inputs but fail to resolve often divergent sales projections of marketing, operations and sales management. Production plans driven by inaccurate

forecasts can result in dramatic shortages and overages. Control - without intelligence. ERP systems let companies institute radical business process change. But they make dumb decisions. For instance, MRP schedules material requirements based on the assumption of unlimited plant capacity. The result is inventory excess or shortfalls

at each stage in the process. Span — without alignment. Inte-grated ERP packages let a company tie together multiple plants and distribution facilities from an organiza tional and inventory perspective. But ERP can't view plants as substitutes for one another, even if they make the same product. So leveraging re-sources across plants and distribu-

tion facilities is a manual process. As for flexibility, almost all ERP suites were designed to operate in an over-the-wall fashion. Such stovepipe logistics can't adequate ly react to changes in

customer demand.

cations, increased un-

stocked inventories

ERP isn't flexible Moreover, at each enough for today's handoff between applicertainty leads to over-

longer wait time and slower response. And things will get of that correctly, you must adopt worse as the Internet economy drives a business revolution that Forrester Research, Inc. calls "dynamic trade" - the satisfaction of current demand with custom response.

In a dynamic trade environment, the following things happen: Forester Research, Inc. in Ca Services eclipse products, Companies Mass. His Internet address is use services such as vendor-managed

inventory and direct store delivery: that requires on-the-fly business process change.

mand drives production. Comp nies are moving to make-to-order and late-assembly strategies. Price matches market conditions Businesses reduce inventory to maximize profits in commodity or supply-

driven markets. The key to dynamic trade is audity And that's where FRP stumbles So what should you do with ERP suites? Buy them if you need them, but only if they deliver known sipess value, such as collecting information needed for dynamic trade or fixing year 2000 and

> Otherwise, turn outward: Deploy extended supply-chain. Internet commerce and customer manag ment solutions to position yourself for the world of dynamic trade.

And to do any a component application strategy, buying solutions from multiple suppliers. But that's another con-versation.

Cameron is a principal analyst at Fornester Research, Inc. in Cambridge, hcameron@forrester.com.

ow can anyone claim that ERP applications are in trouble? We're in the midst of one of those rare situations in which customers' desires and vendors' offerings have converged. The result is a

booming market that shows no sign of abating. In the past three years, the enterprise resource planning (ERP) market has grown at a compound annual rate of 1/8. What other 5xt billion indus-

try can match that?

In the manufacturing industries, it's virtually impossible to compete effectively without a comprehensive set of highly integrated business applications. The growth of ERP is a direct result of the fierce global competition, short product life cycles, highly distributed operations and information driven management that characterizems and settlement of the competition of

today's manufacturing environment Let's look at the alternatives to see if they are a real threat to ERP suites. One option is the best-of-breed approach, where a company selects several applications from various special ist vendors and attempts to assemble its own system. But whou there: Businesses that try this approach find that not only are the initial license fees higher, but that the integration and im plementation costs are also typically several times more expensive. The architectures of the individual applications are different, the user interfaces are inconsistent, the dats models overlap. It's a big labor-intensive mess Companies may spend months just trying to reconcile vital dats fields.

If the system does get impl

the information systems department lives in terror of each new product release, wondering which interface will break this time. Then, of course, there's the ongoing support nightmare that inevitably crops up when each vendor claims that the problem must

vendor claims that the problem must be in the olsher vendor's software. Another alternative to purchasing a prepackaged ERP suite is to hire a systems integrator to assemble a custom system from component products. This is simply best-of-breed with a general contractor. Systems integrators

general contractor. Systems integrators can't fill the roles of software companies. They can assemble onetime solutions, but they can't provide the critical product support, training or enhancement releases you need.

The argument that ERP is on its

The argument that ERP is on its deathbed is inevitably led by technologists who would once again have you believe that building your own system is easy. There's always a technology 'breakthrough' that makes it possible, they promise. Yeah, right.

Even if it were feasible to assemble a custom system, most buyers wouldn't want to. The vast majority of companies have always hoped to putchase as information system as a product, not as a collection of technologies, components and services. The ERP vendors have been successful precisely because they are astempting to build such a product. A sypical ERP system

now offers broad functional coverage: technical industry extensions: a robusttechnical architecture; training, doc umentation, implementation and process design tools; product enhancments; global support and an extensive list of software, 'services and technology partners. It turi quite a systemin-a-box, but it's closer than we have

products rather

cial services.

in-a-box, but it's closer than we have ever been before. ERP will continue to succeed because most people prefer to buy

than parts.
The concept is
so compelling
that it's rapidly
expanding be
yond its manufacturing roots
into industries
such as retail,
utilities, finan
been befor

education even government. As these industries struggle with the year a ooo problems in their custom systems, they begin to appreciate the benefits of bysing packaged suites from vendoes that will support and enhance the applications. Reognizing this opportunity, most major ERP vendors are repeakaging their

products for vertical industries. ERP vendoss have extraordinary opportunities for growth. They can sell additional applications and seast to systems into their traditional industry and goographic market. They can orpand into new verticals, add new applications or increase their geographic coverage. ERP in trouble? ERP in posited for enormous growth.

Shepherd is vice president of research at AMR Research, Inc. in Boston. His Internet address is phepherd@ amrresearch.com.

# Facts, figures & functions

### BOOKS

Network Resource Plannin For SAP R/3, Basn IV and PeopleSoft: A Guide to

Enterprise Applications By Annette Clewett, Dana Franklin and Ann McCown (McGraw-Hill Computing,

in and deCown raw-Hill sating, York;

(unow pbg magraw-hill con computing)

Oracle 8: The Complete Reference (Oracle Series) By George Koch and Key

SAP Documentation and Training Development Goldo By Kathryn E. Park (Bobkat

SAP R/3 Business Blooprint: Understanding the Business Process Refurence Blodel By Thomas Curran, Gerhard Keller and Andrew Ladd (Prentice Hall Professional Technical Reference, Upper Saddle River, N.J.; 1997)

Special Edition Uning SAP R/X The Meet Compilete Reference By ASAP World Consultancy Gray Elkington and Jonathan Blain (Que Education and Training, New York 1997)

1997) (www.mcp.com/mcp\_ sublishers/nue)

Manufacturing Planning and Costrac Reyeast MEP II By Paul Higgins, Lxam Til ney and P. Le Roy (Kluser Academic Publishers; Dordrecht, The Netherlands; 1996)

Pacts, page 64

Lotus Notes-based knowledge man agement efforts that are one-server

triumphs. When the firm scaled up

to a few thousand servers, you could

go it alone now. If you can't show you have a portfolio of partner rela-

tionships across the enterprise spec

trum, forget about ever being a top-

tier player in the long run. Here are

just a few comments I've heard from

executives at leading Silicon Valley

firms, comments I completely en-dorse: "People are kidding them-

selves if they don't have strong part-

ners"; "Ally or die — you have to have good partners with you";

"Any software company has to find a

middleware partner"; and "Your com-petitor is also your partner. Other-

wise, you expose weaknesses in the

S. FIT WITH THE EMERGING

MAINSTREAM: You can't be just a

database software provider or an elec-

tronic-commerce Web player or a

wireless provides. You have to be able

to move with and within all the main ows of IT - all of them. You can't

be the old Wang Labs, which had su-

perb products but was out of the

telecommunications mainstream or a Motorola, once the leader for a

decade in the analog product main

stream but now struggling to get back in the digital wireless flow.

the perfect vendor rather than the

perfect PC product. Let me end by

rephrasing my title: "15 professionals talk about the perfect system. How

about the perfect IS organization?"

The customers of IS see it as a ven-

dor, the outsourcing business restr

on substituting a commercial vendor

site support on demand, its scalabili-

ty. its partnership portfolio and its fit

with the emerging mainstream. If it has all those, it will find its products

easily from the perfect vendors. It will become the preferred supplier to

the business, regardless of product.

And it will be as custome

obsessed as it wishes its own suppli-

Keen's look The Business Internet

He can be reached at peterio peterkeen.com

and Intranets was published in Febru

ary by Harvard Business School Press.

The perfect IS unit it also marked by its record of truth, its expert on

for an internal one

ers would be D

I started this article by stressing

watch the network die 4. PARTNERS: No IT provider can

# PETER G. W. KEEN

INSTEA THE PERFECT PRODUCT, HOW ABOUT THE PERFECT SUPPLIER?



### entire IT field is productcentered. It ought to be supplierobsessed instead.

Most people will take "good enough" over "perfect" if it comes from a vendor they trust. Look at the annual articles on the perfect PC put out by the trade press: Would you buy one of those wonder machines? The answer is probably not, they rarely match up with a vendor you'd want to have sell and support it.

The product era is basically over in most areas of IT - not just PCs. Customers have at least several good choices, and no one vendor can completely dominate a market. That's true in ERP, with vendors such as Baan, I. D. Edwards, PeopleSoft. SAP and Oracle, among others, offering a broad shelf of choices. There are good choices, too, in databases, PCs, switches, wireless infrastruc tures and systems integration. It's not that products don't matter, but that the differentiation among toptier providers bes elsewhere. Here's my list of what must apply to products and services in ERP or any other

technology: 1. KEEPING PROMISES: Truth in ng, partnership and support. When IS picks a "strategic" vendor, it's really placing a bet on a large part of its own future flexibility, costs, efficiency and service. It isn't asking for the perfect product, but the best relationship, commitment and meeting of promises. So the perfect vendor has a proven record in meeting promises. Terms such as brockers were and superware are signals that IT promises are too often of the pie-

crust sort easily made and easily 2. EXPERT ON-SITE SUPPORT ON DEMAND: This may have been IBM's single greatest differentiation when it lacked a product edge. It was a differentiation for the excellent Digstal Equipment Corp. of the 1970s. too. Given the complexity of the en-

base and computing infrastructures of today, it's a sorely missed need that will take on new importance in sorting out the best vendors from the

3. SCALABILITY: Scalability has replaced compatibility and interoper ability as a criterion for best vs. average. Scalability is essential in an era in which prototypes and pilots can easily be built on a variety of miniplatforms - intranets, data marts electronic-commerce Web sites and the like — but they don't scale. My favorite examples have long been the

# Facts, figures & functions

The ERP

market

The ERP market will climb from \$14.8 billion this year to \$52 billion in 2002, for a ERP market are se into two tiers and are fo into two tests and are focus ing on expanded product functionality, new target markets and higher penetra tion rates. The top tier con-sists of five vendors — Baan, J. D. Edwards, Oracle Applications, PeopleSoft and SAP. These companies account for 64% of the ERI market revenue and have grown during the post yes at a furious pace of 61%. addition, Baan, J. D. Edwards, Oracle and People Soft are each expected to approach or exceed \$1 bil



ion in total revenue this

ects, page 67



**IISWEST** 

Farmland's Dick Weaver: "I've got two things I'd like SAP to do faster: bring out a more robust set of **[business APIs]** to interface different front ends to SAP and do more to interface SAP to a data warehouse."

By Alan Radding

hen it comes to priorities, where enterprise resource planning (ERP) vendors are going and what users want aren't necessarily in sync.

Vendors want to ensure that their current sales growth continues even when year 2000-driven sales peter out. Users, in general, want to get up and running fast, with as much integration and configuration as possi-ble already done for them.

The leading ERP vendors are pursuing a variety of initiatives that they are betting will drive growth in the future. Those include expanding the scope of traditional manufacturing resource planning (MRP) and ERP packages, offering products tailored to vertical markets, pushing down the food chain into the midsize and small business arenas and simplifying the implementation of the com-

plex applications.
In the ERP business, the trendsetters are SAP AG, The Baan Co., PeopleSoft, Inc., J. D. Edwards & Co. and Oracle Corp., according to David Dobrin, director of Benchmarking Partners, Inc. in Cambridge, Mass. 'These vendors have the highest revenue and the most presence," he notes. They also have the broadest franchise. Other ERP vendors, such as Lawson Software, Marcam Solutions, Inc. and OAD. Inc., tend to take a narrower, industry-specific focus.

The key ERP trends all focus on how vendors can increase sales. Jun Shepherd, vice president of research at AMR Research. Inc. in Boston, says he sees that in "the vertical ization of the products," or when the vendor tailors the product for a specific industry. Dobrin says he sees the vendors gro

their market by expanding the scope of ERP beyond MRP to new areas, such as supply

chain management.

The expansion of ERP's scope can be seen in the efforts of the leading vendors to particular that have the control of the ner with or acquire companies that have complementary products. "There is a fallacy that ERP systems do everything. They don't.

# SIGNALS

ERP vendors are looking for new sources of revenue, and users want tweaks to today's products

The vendors know there is a lot more to do than just resource planning and financials," Dobrin

explains.
Although the expansion into supply-chain management has altraced the most attendard, remote attendard the most attendard the most attendard the most actual to a marketing and more. That strategy runs counter to the best-of-tered strategy, where organizations adopt the best product for each function human resources, plant maintenance — and worry about integration later.

For example, Basn acquired Aurum Software last year to add customer interaction to its RRP package, J. D. Edwards announced plans to integrate a variety of best-of-breed packages with its One-World product through partresships with MarincOne, Inc., The Premiseys Corp., Carnstat Systems, Inc. and SynQuest, Inc.

Verticalization has become a necessity today if venders are to continue to grow, Shepherd says. Through verticalization, the vendor's general ERP product is presented as "a series of products, each customized for a specific industry." he explains.

dustry, he explains.
For example, PeopleSoft acquired TriMark Technologies, which provides life insurance industry software, and Interpid Systems, which offers retail management capabilities. Oracle announced initiatives to target the automotive, retail, utilities and health care industries with specialized offerings.

Verticalization can be seen as part of a Jarger effort by ERP vendoes to ease the implementation of their products. By now, everyone has heard horror stories of ERP implementations that took two or three years and cost tens of millions of dollars. That happens, in part, because the ERP p.ckages arre needing to be configured for the product of part because the product of the product of

ntons of dutars. That happens, in part, because the ERP pc.kages arrive needing to be configured for the business and the industry from the ground up. By configuing parts of the pickage in advance for a given industry and cutting out functions not required in that industry, vendors can shorten and ease the implementation peocess. The preconfiguration may be based on the size of the company,

the specific hardware or the vertical market," Shepherd says. SAP, smarting from user tales of implementation woe, has made rapid implementation a peiority. This year it announced rapid implementation initiatives for the public sector as well as the following industries: oil and gamedia, high technology and electronics, engineering and constructronics, engineering and construction, and chemical.

Another trend is the push into the small and midsize business markets. The middle market has always been good for packaged applications. Shepherd says. In the 1980s, midsize companies invest of extensively in MAP II systems running on minicomputers. Today, those systems are ready for replacement, making a ripe market for the big ERP vendors, provided for the big ERP vendors, provided

enough to implement.

The small-bustness market, which consists of user companies with sales of \$50 million or less, is an even larger opportunity, Shepherd says. But it's much more difficult for the large ERP players to reach that market because the cost of selling into and servicing small bustnesses is too great for what there can make on each ask.

they can make their solutions easy

they can make on each sale.

In terms of technology trends,
the World Wide Web and Windows
NT are the key issues, according to
Dobin. However, the Web is geoblematic at this time. Every wender
is Web-enabling its products because users expect it, but "neobody really knows what to do with it
yet," Dobin many. Windows NT
draws interved because of concerns
that Unix is cootly and hard to
manage, especially as wenders by
to reach walled businesses.

Users, however, appear less in-Mixed planels, page 68

# Facts, figures & functions

# The key players

compelerwerld.com) September 14, 1996 Computerwerl

Top five ERP vandors by

SAP NG	\$4.7 billion
Grade Pleascists	St.9 billion
PeopleSoft	\$1.4 billion
Peer S	Syga million
J. D. Edwards	\$990 million
Others	Sell billion
TOTAL MARKET	\$14.8 billion

 From a survey by management consultancy Booz Allen & Hamilton, Inc.: 70% of Fortune 1,000 companies have either begun implementing ERP systems or plan to implement them in the second of the consultance.

 From AMR Research: 20,000 companies, each with revenue of up to \$250 million, will license ERP sys-

 Morgan Stanley claims that 15% to 20% of ERP reenue comes from companies looking to the technology as a solution to the year 2000 problem. But a recent survey of 50 IT executives to Forrester Research, Inc. found that year 2000 fixes didn't make the list of 100

### Soaring with services

 Spending will slow som what this year and next ye as attention turns toward addressing the year 2000 and euro issues but will p up next year.

Facts, page 4

# Facts, figures & functions

CONTINUED FROM PAGE 67

The worldwide market for ERP consulting and implentation services will near uble by 2002, Internation Data Corp., a Computerwo er company, said in a dy this year. A year-by-ye down of revenue in the



not is made to No attempt is made to project the impact of currer cy fluctuations on spending numbers; so any significant currency fluctuations will af fect the forecast.

 The client/server portion of the ERP services market will grow at a much faster rate than the total ERP ser-vices market, chalking up five-year compound annu-growth rate of 25.2% from 1995 to 2002, vs. 17.4%

rid's loading ERP cos providers, 1007

Anterpes Co		SegoM
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Potalitie & To		\$769M
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Companies to		\$575M
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Facts, page follows

# MIXED SIGNALS

CONTINUED FROM PAGE 67

terested in the underlying tech- a major paradigm shift that will pology, at least at the moment. Whether the applications use components, objects, Java or substance tomogrous's latest technology will be doesn't concern users - except to the extent that

they must support the system in the long run. "The technology is less important to users now than in the

leave somebody behind." Shep herd says. There's little fear at this point that ERP vendors will get too far ahead of users in the technology arena.

Other trends include the effort to make ERP systems more manageable through integration with systems management technology and improved access to past. We are not in the midst of the vast amounts of data those

systems collect Users voice only token inter est in systems management; few

say the management of the ERP applications needs immediate or drastic attention. Improved data access capabilities, however, draw more user interest. D

Radding is a freelance writer in Newton, Mass. His Internet address is radding@mediaone.net

vendors

RP users, who have their own wish list when it comes to what vendors should be focusing on, generally welcome the directions that leading vendors are taking, with some exceptions. The differences often are of degree or timing, as reflected in the following wish lists of several customers of major ERP

business area manager, Farmland Industries, Inc. in Konsus City, Mo. "I've got two things I'd like SAP to do faster: bring out a more robust set of (business application programming interfaces to interface different front ends to SAP and do more to interface SAP to a data

warehouse." Weaver acknowledges that SAP is moving in both those directions; it is the slowness of SAP's progress that bothers him. He also says he wants SAP to expand into more functional areas. Farmland already is doing extensive integration of agricultural, industryspecific functionality with SAP, but "we don't like to do integration within our

[Baan USET] Mark Bland, international project manager/information systems, Butler Manufacturing Co. in Kansas City, Mo. "We want to access and use real-time information and exchange information Component Object Mod-

own organization."

[SAP user] Dick Weaver, el/Distributed Compo- on the business." Olymnent Object Modell or pus. however, is con-[Common Object Request cerned about the ability to Broker Architecturel, We support systems based on leading-edge technology. want the interchange of information regardless of Data access, on the other the system or platform. hand: isn't a critical issue Baan has embarked on now, "but will be increasthis, but it is still some ingly important to us over time." Wachter save. way off.

He also encourages [Oracle Financials user] Baan to pick up the pace on componentization and Stephen Stone, general manager, Knight Ridder the corresponding selective upgrade capability Shared Services in Miami. and provide more Inter-\*Oracle is pretty much on net capabilities. The comtarpet with where we pany has implemented want to go. We want workflow. We're already Baan overseas. Because Butler still hasn't decided using [an Oracle Finanto implement Baan in the cials-based app) over the intranet with 1,000 users U.S.; anything the vendor does to case and speed requesting goods and serimplementation will be vices. What we really welcome. "A large part of want is to capture all inour money is spent on implementation," he says. formation at the source and eliminate handoffs,

but that's Nirvana." [J. D. Edwards user] Los The company doesn't Wachter, vice president and have a data warehouse, so CIO at Olympus America, data warehouse integra-Inc. in Mebrille, N.Y. All tion isn't an interest to the vendors have to sim-Knight Ridder, although plify the implementation. Stone says he realizes the The Web is also a priority industry at large is presswith us. We welcome the ing for such integration. expanded scope because Efforts to ease the impleit reduces the risk of intementation of Oracle Fieration and lets us focus nancials also don't im-

press Stone because his organization already has finished implementation. We did some customizing. Everybody would like it to be easier, but none of these systems are plug

and play."

[PeopleSoft user] Scott Billman, project manager, Government Management Information Systems project for the state of Indiana. Functional integration is a big deal for us. In the past, we've spent a lot of time and effort trying to integrate modules from different vendors. Now we want as much functionality from one vendor as possible. Data access is also very important. We've never had a central system that delivered inanalysis to users. We

hope to stop building stand-alone reporting systerns." Ease of implemen tation is critical, but Billman says be isn't sure it's feasible. The state took PeopleSoft's public sector version. "We're going to find out soon if it's am

- Alon Radding

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# The big play.



CAREER OPPORTUNITIES

# STILL IN THE

# MONEY

ERP remains a quick ticket to a six-figure income

And it's been good for the career of Arlene Milano at Elf Atochem

By Rochelle Garner

ssst! Hey, buddy. Want to land a job that brings in the big bucks, increases your professional value and paves a career path that leads to a rosy horizon? Then grab whatever chance you can to work at a company that's committed itself to a well-thought-out deployment of one of the leading enterprise resource planning (ERP) packages.

That means software from the likes of SAP AG, PeopleSoft, Inc., The Baan Co., Oracle Corp. and J. D. Edwards & Co. "I suspect that in the next four or five years, people

J. D. Rebusards & Co.

I suspect that in the next four or five years, people who are skilled in anything but the top enterprise systems will become marginal," says Robert M. Rubin, vice president of information services at Elf Anochem North America in Philadelphia. They's not to such that traditional computer skills will go away — especially since skills have always lasted longer than poor in the property of the property of

thought they would. But few technologies affect a company as profoundly as an ERP pysicen does not be the property of the prop

# Facts, figures & functions

CONTINUED FROM PAGE &

### **ERP** news

- a Sale GII Ck. now offers a new business: SAP implementation. The company is using expertise gained through its own SAP implementation to help companies worldwide implement SAP systems. The company claims \$800 million in reerue since launching the venture in January. (Finetropy of the company)
- e treatigne Copy, Courty, formore, Treasy, a beauty, formore, Treasy, a beauty, formore, company, has soud Anderser Consulting over a 1994 contract to install SAP for order processing, inventory control and other business processes. The \$500 million sers's "defective used" led. Service services and services sers's "defective used" led. part, Fonkleyer used SAP Anders used SAP Anders days the charge and the services of the services Andersen days the charge and have souded to sight the suits' upprously (Compiled suits' upprously (Compiled from Computational arts)

• One of the world's largest REF implementations is being fireshed at The Boeing Commercial Auplane Croop. The Base IV implementation was begun interesting to the Base IV implementation was begun cerebre 1997, when IV implementation was begun stalled in 19 parts febrication plants. Boeing is expected to complete integration of all engineering and sales teams by January. The size of the job. So million, with Sp.coop users expected to be connected to the possibility of the IV.

Facts, page 7.

# Facts, figures & functions

CONTINUED FROM PAGE 71

### Organizations and fan clubs



al Society wa Contre Falls Church, Va.,

### w forces on the

### A little FRP bumor

m unuserpropersite.com ums and Chat section

How many SAP consultants es it take to screw in a light-

A. None. They declare darkness

# STILL IN THE MONEY

PeopleSoft financials — can nab

But though sky-high pay may buy some happiness, it won't necessarily buy a career. That requires long-term

opportunities for growth in whatever direction information technolouv professionals choose Arlene Milano has found that growth at Elf Atochem, a huge

chemicals producer that outsourced its legacy systems in 1994. The company has completed its R/s reliout in 12 of 13 divisions and is launching a companywide upgrade to Version 4.0. Milano recently became project leader for that upgrade effort. She began working with SAP as a developer and then got involved in pro gramming, configuration, training

and documentation.
"I realized this could be good for my career about four months into it." Milano says. "I was working with businesspeople, understanding how my functions and les how all of the processes are so high ly integrated. And over the years, I learned how to manage and coordinate a project. Now I can apply my skills to anything, whether it's tech-

nically or business-oriented." That career-enhancing power is likely to spread, according to AMR Research, Inc. The Boston-based market research firm predicts the ERP market will grow at a com pound annual rate of 17% over the next five years - exceeding \$5a bil-

lion by 2002 That spells opportunity with a cap-ital "O," extending beyond Fortune 500 corporations and the Big Six to include midsize companies and middle-tier consulting firms.

But the catch is that, outside of consulting firms, few companies have thought about job opportunities at project's end. Such shortsightedness has huge implications for both companies and their employees. When companies don't conside ways to leverage their newly skilled and valuable staff, they sever the threads of corporate loyalty.

Start with the skills. What's hot? For starters, there's a crying need for people who are expert in implementing SAP's human resources module and PeopleSoft's financial application. Next, companies crave the so-called "functional" professionals, who figure out business require-

ments and map them to each ERP package's configuration tables. Orgaons also can't get enough prople with technical skills - be it Advanced Business Application Programming, Basis development in SAP or PeopleTools for PeopleSoft. Salaries for those positions, both technical and functional, easily ex-

cerd Supp pop But the big question, from a career standpoint, is whether demand for both technical and functional skills will remain equally high. Those salaries of \$120,000.

own career trails \$140.000 and even \$150,000 per year for purely technical proficiency

of running a project," Damiano says It gives you a chance to get intimate with the businesspeople who will run that environment. That kind of visibility is always good for a career, at all levels. And it's definitely something that supplements a career in project management."

SETTING OUT OF DODGE lo many ways, Milano and Damiano

are twice blessed. They work at com panies where IT staff is treated with respect and where the ERP projects evolved into long-term business ensanes. But not every company installing ERP software can make that boast - which is why so many ERP professionals decide to blaze their

Most will migrate to a consu firm. But though all consulting

SALARIES FOR I	ERP PROFESSIONALS		
OB TITLE	BASE	TOTAL COMPENSATION*	
Senior programmer/enalyst	\$53,000	\$54,600	
ERP configurer	\$59,500	\$64,300	
Project leader	\$68,300	\$72,000	
Senior systems analyst	\$59,000	\$59,600	
compensation figures represent market as		0	

might not last, thanks to the effect of offshore programming shops. For that reason, it's best to follow Milano's example: Supplement technical expertise with an understanding of how and why a business operates. Then there's the question of where to work. IT professionals have three options: work at companies with well-articulated career paths, go independent or work for consulting rms. Consulting firms typically

"There are body shops [independent contractor firms that provide littie more than administrative support) that will pay \$150,000 a year, but no retirement benefits," says for Reed, director of the SAP/ERP division at Allen Davis & Associates. Fred Dumiano's opportunity lies outside consulting firms. A technical

offer larger salaries but vary consid-

erably in their benefits

program manager at Xerox Corp.'s Document Services Group in Rochester, N.Y. Damiano oversees the division's PeopleSoft implementation.

A certified project manager he had already embarked on one of the hottest career paths open to IT personnel. By working on the People-Soft effort, Damiano says he believes he has further widened his career

'This goes beyond the mechanics

firms aren't created equal, there's one thing they do have in common: Their staffs live out of a suitcase five days per week. Frankly, it gets old. However, ERP professionals don't have to work for someone else Just

ask Andy Guagenty, who gave up the life of a Big Six consultant earlier this year. Guagenty has gone independent. The benefits? He earns \$200,000 by working 45 weeks per year, has

more free time and the ability to choose the projects that interest him. Equally important, he's taking charge of his own destiny To me, this is the best positi someone like me, with an entrep neurial bent, could be in," says Gua genty from his Franklin, Mass.,

home. "I've worked with a diverse array of businesses, and that's some thing I can apply anywhere." Notice a theme yet? All of these

ERP experts followed their own compasses and are on the same road to long-term success. All say they have learned skills and picked up knowledge they can apply wherev their hearts take them. And if that isn't the definition of a great career. what is 3 [2]

Garner is a freelance writer in San Carlos, Calif.

# IT Careers

# Career Counselor

IT pros obviously can get a big increase in pay by jumping ship to another company. But is it worth it?

# **JOB-HOPPING**

Out of the frying pan, into the fire

IT'S NO SECRET THAT AN experienced IT pro can get a significant increase in salary by jumping ship to work for a company's competitor or any other organization willing to foot the bill. But its such a more really worth it in the long run? How for can you get away with it before damaging your resultation?

The most common reason for leaving today is a desire to earn more money. Next is lack of technical progression. Also ranking high is an incomnible consensor.

Whatever the reason, resumes that routinely show fewer than two years at the same plo can result in a stigm of flakiness. A rule of thumb to remember: An acceptable amount of job turnover is to have worked an average of at least three years per job throughout your work history.

### FLEETING GLORY? Fortunately for job seekers, we're riding the all-

time high save of technical labert shortages. As a result, hiring managers may be more forgiving of a higher rate of job-hopping. Even so, employers still want to see hist candidate have demonstrated a commitment to their work and progressed in their careest. If a person is changing blow subtout progression, it may be precised as moring just the matter carees may be only the sold included, you've made more more, of the double hands, I you've show on your resume a progression of responsision, and the progression of responsibility, learning and larger badget handled.

### PROGRESSION A KEY

Thought two years is now obout, more than its years in the same position with the same comployer—without additional responsibilities or other power, without additional responsibilities or other power the complex of the power of the power of the power of the complex of the power of the power

### THE RIGHT THING TO DO

On your renume, list the reasons for leaving each of your previous jobs. Be sure those reasons reflect a conscious choice to move on, not something that forced your departure. You may also want to list the most positive esperiences or skills learned. This list will help prepare you to answer interview questions such as "Why did you leave?"

or "What did you like most about working there?" Even if you left your previous

employer on bad terms — never bad-mouth it in an interview. Think of a creative, truthful way of explaining the reason for learning in a positive, prosertive style such as: "After several years of enjoying my work, I decided it would be better for my career to take on my chal-



T LINA FAFAR

FOLLOWING THE MONET?

Most jub-hoppers look for a new position every 18 months, acknowledging to recruiters that their motive is more money. They may be looking for \$50,000 moter per year than what they are earning now; three months later, it could be up to \$55,000. Yet hey co first any enough to covince a potential employer that the reasons for learing a provisors job involved an isolated including.

dent — and that this is the unique opportunity. So if you're not just hopping but expect to see a bit moce in the paycheds, what can you expect bit moce in the paycheds, what can you expect to 20% range for a new job, depending on the previous salary. However, himp managers have salary guidelines and must sake to those paramers. Some companies are making salary adjusttions of the paych of the paych of the paych paych is a superior of the paych of paych paych

### THE CONTRACTING ALTERNATIVE

If you find yourself moving from one job to the next quickly, you may want to consider contracting. In that arena, changing jobs is part of the John. Professional contractors schedule their work, and because they are already making a good tiping, typically down' job-hop. Completing the assignment is critical for callbacks and referrals in their line of the sategars.

Before you leap just for more money, check to see if your supervisor is willing and/or able to increase your salary to be more in line with the going rate. You may even try for an internal transfer to another team with a pry increase. Still, don't trade job astifaction for a couple more dollars per hour, a giossibly longer commune and co-workers you mayinot like as much as your buddies in the nest cube. Of

Fufard is the branch manager of Montgomery West, a retained executive search firm in Torrance, Celif. Her Internet address is LinaFufard@aol.com.

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Barbers Mitchell, The Mitchell Group

High TechNigh Touch: Creating the Recruiting Office of the Future Sue Keever, The Keever Group

10:00am Sponsor Showcase/Coffee Break 10:30am General Session:

Carlos Echalar, Litton PRC

1:30pm Town Hell Forum
Moderator Gary Cluff, Cluff & Associates

3:00pm Sponsor Showcase/Coffee Break
3:30pm Concurrent Sessions repeat:

Building an Internet Recuritment Strategy Tracey Claybrook. Psychock & Associates Retailining this Best: Practical Resention Strategies that Worl Sector Michal, The Michael Group. High TeckNigh Teach: Creating the Recruiting Office Say Kerwyl, The Kernet Group.

5:00pm Program ends

## Selected Sessions Include:

Luncheon/Keynote Address

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will give you as up-or-to-manner soon as the very special largenese address.

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Strategic Staffing In a Competitive Environment Carlos Echalas, Vice President of Staffing, Limon PRC

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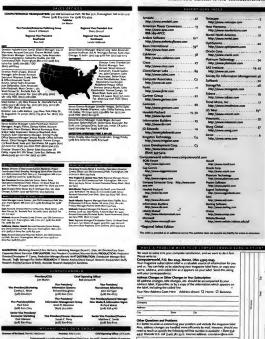
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# Users weren't bullied

### CONTINUED FROM PAGE 1

thy Regan, manager of advanced information development at Federal Express Corp in Memphis. "Maybe their software causes you to on in a certain direction, (but) there's been no coercion or strong-arming

that I'm more of Asked if be has felt pressured by Microsoft, Barry Lynn, executive vice president and CJO at Wells Fargo Bank in San Francisco, said. "Absolutely not. We have an excellent working relationship with Microsoft, Their (products) interoperate in our

network with many of their competitors' tools." Microsoft officials have consistently denied using coercive pressure on the company's customers. But two consultants claimed that Microsoft does pressure users into not burner software from rival software makers, as the government

claims. And one user claimed that Microsoft's strong-arm tactics start at the most basic level: its Microsoft Certified Systems Enginger training classes.

'Asking questions or pointing out flaws and shortcomings in Microsoft products during train ing classes is a major-league offense," said one serior information systems manager who works for a New York-based Big Six accounting firm and who

said he committed such a faus Several of the users polled said they knew that Microsoft had pressured OEMs. "Microsoft uses the tactic of FUD

- fear, uncertainty and doubt as a way of closing out their said Patrick competitors," Schrud, a software engineer at Bently Nevada Corp. in Minden,

Many expersted that the covernment should concentrate its efforts on Microsoft's relationshins with OFMs.

The closest thing to [strong arm tactics? I've heard about is that sometimes a company may want to run a third-party product, and Microsoft says that if they do, it won't support the platform," said lack Cohen, a systems specialist at Constal Corp. sn Houston. "Is it possi-

ble Microsoft does this? Sure." 'The point (the government) needs to concentrate on is Microsoft's tactics that are used with the largest hardware vendors and the bundling deals. It will be hard enough to prove that case " Cohen said

WAS DEC PRESSUR On that front, also last week, came charges that former Digital Equipment Corp. CEO Robert Palmer was pressured by Microsoft CEO Bill Gates into

### nt of Justice's

James Barksdale, Netsc Communications Core. David Colburn, America

Online, Inc. > William Harris, Intuit, Inc > Steven McGeady, Intel Corp.

► John Soyring, IBM David Farber, University

of Pennsylvania Edward Felten, Princeton

University Franklin Fisher, MIT David Sibley, University

of Texas Scott Vesey, The Boeing Co. ► Glenn Weadock, Indep dent Software, Inc.

dropping development of a netcomputer code-named Shark that had gone out to at least one customer site.

Digital orfused comment, and Microsoft would say only that it had a "great relationship" with Digital. But according to Oracle Corp. CEO Larry Ellison, after Palmer suddenly canceled the large project that it had been deping with Oracle, other Digital employees told him Palme had been forced to withdraw from the partnership under

pressure from Gates. There were rumors at the time that Gates had told Palmer

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to either back off Larry" or face the prospect of Microsoft with drawing support for Digital's Alpha chip, said longtime Digi tal follower Terry Shannon, editor of "Shannon Knows Distributed Enterprise Computing," a newsletter in Ashland, Mass.

Digital apparently was very close to releasing a network computer built using a Strong ARM RISC chip and based on a specification from Network Computers, Inc., an Oracle subsidiary. Several prototypes of the product in fact were demonstrated at Oracle World, and the company had also scheduled a

session on network computers at a DECUS user group session in Copenhagen, which was canceled at the eleventh hour, Shannon said

'The government is probably oing out on a limb with this pressuring charge." Cohen said. 'Even if it were true, what's really wrong with that? As a commony you don't have to take the deal with Microsoft." With a Sept. as trial date looming ever closes, both sides in the government's antitrust case against Microsoft last week rolled out their witness lists.

While Gates was conspicuo in his absence from the Microsoft list, Scott Vesey, an executive at The Boeing Co., stood out as the lone user representative among the vendors and academics on the Department of Justice's list (see chart). Vesey likely will be be asked

to describe the typical relationthin a large cornorate customer such as Boring has with Microsoft, including whether Microsoft exerts pressure on its customers to stay loval to the Microsofi brand and not purchase software developed by its competitors.

### MORFOULINE >

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# Microsoft subpoenas turn tables

· Rivals\* documents sought; judge mulls delay tice of attempting to expand its

By Stewart Deck, Patrick Thihodesu and faikumar Vijayan IN A TIT-FOR-TAT move. Mi-

crosoft Corp. issued an eleventh-hour flurry of subpoenas last week seeking to prove that rival companies consp to lock it out of various marketplaces. According to some cynics, the move could be designed to delay the start of the trial "It is important for us to look

for information about (those) companies colluding together to stifle competition (because) these are the exact issues the government has raised regard ing Microsoft," said Jim Culli nan, a Microsoft spokesman. At the same time, Micros accused the Department of Jus-

case beyond its original boundaries and asked the court to dismiss the case on the grounds that the government's suit was "fatally flawed." At a contentious hearing last

Friday, Judge Thomas Penfield Jackson did not rule on Microsoft's request for dismissal. The trial is slated to start Sept.

At Friday's hearing, Judge Jackson asked more quest of Microsoft than of the DOJ Investory. Me was most interest. ed in learning why Microsoft's beowser had to be a separate product from the operating system and what consumer bene fits were gained by that.

Calling the antitrust case

"half baked" and "of highly du-bious merit," attorney John L. Warden, of Sulleran & Cromwelli in New York, disputed in court what Microsoft has long argued in legal briefs: that the Windows operating system and its browser are inseparable. This isn't providing two things in one package, this is providing one thing," Warden said.

But DOI attorney David Boies said Microsoft has been involved in a predatory campaign ainst browser rival Netscape ommonication Corp. \*By giv ing everything away for free that Netscape is charging for they're not going to have a busi-

America Online, Inc.'s agreement to use Microsoft's browser technology also drew the government's ire. While Warden

argued that AOL selected Microsoft in fair competition with Netscape, Boies said Microsoft used its operating system strength to leverage the agreement. AOL might not have picked Microsoft "except for the opportunity to get favorable placement in the operating systerns," Boies said.

The lustice Depa ness list indicates that the government is reaching beyond its original case, said Microsoft snokesman Mark Murray, because the list contains only one person, IBM's John Soyring, associated with a PC maker. But one antitrust expert said that is a reasonable tactic. "The essence of the case against Microssed is that it has used its power to engage in various

redatory practices," said Lewis combern, chair of the antitrust and trade regulation practice group at Piper & Marbury LLP. a law firm in Washington.

\*Most courts would recognize that a pattern of abusive predatory conduct would be relevant to the broader question as to whether they were engaging in such conduct Wide-ranging subpoenas

were issued to Sun Microsys tems. Inc., Netscape Comm cations Corp., IBM. Oracle Corp., Hewlett-Packard Co. and Novell, Inc. Each company confirmed that it had received civil subocenas from Microsoft, but most declined to elaborate fireher Sun spokeswoman Lisa Poul-

sen said Sun received a civil subpoena Sept. 4 reques documents regarding meetings or communications with Apple Computer, Inc., IBM, Oracle and Netscape on topics including Unix, Hotlava, JavaScript and World Wide Web howeing software D

Computerworld staff assisted

# Battle over Java in hands of judge

Legal limbo could slow adoption, evolution

By Robert L. Scheier CORPORATE OUVELOPERS are still wondering who controls Java after last week's three-day court battle between Sun Microsystems. Inc. and Microsoft Corp. U.S. District Judge Ronald Whyte in San Jose, Calif., ended the hearings Thursday without ruling or saying when he would rule on Sun's request that Miers and IT administrators need crosoft stop shipping Windows 98 and its Java development tools until it brings its implementation of lava closer to

The legal wrangling makes it harder for large, multinational companies to adopt lava because they typically want "open standard technologies," said an alyst Ron Rappuport at Zona Re-search, Inc. in Redwood Shores. Calif. Major customers want assurances that Sun controls lava's fate, and 'thus court case, as long as it endures, is a quer tion mark," he said, "Develop

to make technology decisions "Their business does not stop because a court case has not

ended," Rappaport continued.
"Until it shakes out, we can't plan on anything," said Cyrus Khoshnevisan, ao eogineeriog manager at Virtual Vineyards.

The Palo Alto. Calif., online wine retailer used fava to write the client portion of a two-tiered client/server application, and we're not going to rewrite this application at this point," Khoshnevisan said. Typical of the confusion, Rep-

paport said, is recent Zona research that shows that developere view Suo as the most influential Java vendor but are more likely to buy Java devel ment tools from Microsoft

"There's a large part of the market whose heart is with Sun but whose checkbook is with Mo crosoft \* be said

Citing a judge's order, both sides declined to discuss in detail the final day of the beering "I think the argument went ex tremely well for Sun," said Sun's lead counsel Rusty Day, of law firm Casebeer, Madrid. Winters and Batchelder in Cupertino. Calif. Day predicted the judge would rule on the case

within two months but declined to be more specific 'Microsoft is pleased with their three days in court and believe they have presented pow Fort Lauderdale, Fla.-based Citerful arguments to the judge about how Microsoft has fully complied with the contract they signed," a Microsoft spokeswoman said.

Sun, which developed Java, claims Microsoft violated its Java licensing agreement by shapping what Day calls a "nonconforming, polluted' version of lava. Because Microsoft's lava implementation would run best on Windows, it could dilute Java's claims to cross-platform compatibility and thus make lava less likely to challenge Microsoft's Windows as a key PC standard, Sun claims, D.

### Xerox plans copiers that take Notes

By Roberta Ficuaro

xtaoa coar, and IBM's Lotus Development Corp. subsidiary last week announced the marriage of their office machines and groupware, respectively, to provide serious workflow functions behind the big green but ton on Xeron coolers

The integration will let customers route and share bardcopy and digital documents by using Lotus software to connect Xerux's Document Centre family of digital copiers to the Lotus Domino Web server

The copiers already let users rint, fax and copy documents from their desktops. With the coming software, users will be able to scan documents from Document Centre into the Lotus Notes E-mail format or into a Domino repository. Users across the network will be able to access those documents. Xerox officials said, thus enhance ing workgroup collaboratio The Lotus software will be

available in the fourth quarter. The product's name and pricing haven't been announced yet. Charles Jeffers, information

technology manager at the Atlanta Convention & Visitors Bureau, uses Xerox's Document Centre 26sST printer for creating proposals. He welcomed the ability to handle tasks from one point, "but we're a Microsoft Office uses, and we have no intention of moving to Notes, be said. []

### Want to cut TCO?

CONTINUED FROM PAGE 1

Sun's specifications.

any other element of the IT their business enviror portfolio is unrealistic "To the real world. TCO must be placed in context with a variety of other important issues such as supplier market posttion, access to professional services, application availability

strategic partnerships, servicelevel agreements and a host of other intangibles that are simply not quan-tifiable." Aberdeen

There is no casy way to do this," said Priscilla Tate, executive director of the Techoology Managers in New York. "If you want to control costs you have to sit down face the facts and do a bud-

"I don't think many companies do the in-depth analysis required to understand what their total cost of ownership is, and beyond that, the tools aren't very mature in general," said Cassandra Matthews, vice president and chief information officer at PECO Energy Corp. in

Also at issue, some users said, is that total cost of owner-ship takes a backseat to other

For example, "We have little interest in the minimization of total cost of ownership, because we're oot really interested in costs so much as gain. Everything we do is driven toward making money," said Chris Horrocks, CIO at Commercial Financial Services

Inc., based in Tul sa, Okla, which has more than 4.000 desktops Nancy Parker. vice president at Federal Home Loan Bank in Dallas, said her company doeso't focus on projects from a

cost-of-ownership

perspective and doesn't even expect "I'm not going to to be able to quantify returns from it. More typically. she said, the focus is on what needs to get done to fulfill a business need.

But the company is making one headway. Parker said her organization has set desktop hardware and software configuration standards and discourages users from deviating from

Though vendors nashed to the plate this year to supply opng system-based tools, such as Microsoft's Zero Administraoceds or focal points within tion for Windows and simpler hardware such as thin clients and the NetPC, the lion's share of the cost of supporting IT which goes toward support, administration and maintenance

- was largely ignored. Analysts said simply using the products that supposedly help IT managers control costs through easier manageability of hardware and noftware isn't enough. Users have to be able to look at how they deliver ser vices and how support costs are

being driven "A lot of the vendors are focused strictly oo products, but you can't reduce TCO without lowering labor costs or if you don't upderstand how their tools can change the way service is delivered." said Vaughn Frick. an analyst at Gartner Group. Inc. in Stamford Comp.

PHTING TASK

The prospect of such a massive undertaking it obviously daunting. Gartner Group estimates that 50% of companies have done nothing, despite the fact that even elementary measures. such as hardware and software standardization and remote management of desktops and servers can cut overall desktop costs by 25%. Of the 50% that have done something, only about half have been encounful The organizations that have made TCO a priority have made

significant progress, but there are a lot of folks out there who haven't, and they really don't understand yet where all of the money goes," Frick said. Vendors such as IBM and

rix Systems. Inc. jumped on th network computer bandwagon. pitching the idea that servercentric clients that could be managed centrally would save lots of money and time. In addition to being wary of the associated back-end administrative rosty many users understand ably balked at the idea of trashing their ensting environments. which amounted to huge invest-

"I'm not going to run out and replace all my PCs with thin clients," said Matt Merrick, vice president of information sysems at Merrick Printing Co. in Lousville, Ky. That in itself would represent a huge cost

and massive restructuring. Merrick said. According to Aberdeen, "Enterprises should not reply on

oversimplified . . . TCO figures as a key buying influence. As long as the customers understands the deceptive nature of TCO and fecus instead on balancine it with a careful . . . consideration of risk-management intangibles, many of the pirfalls associated with a complex application server acquisition can be

### MORFAM IME

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# The Back Page Disputes & suge from the Singes of the account for ser

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projects fail:

You can't get end users to accept the system as it was designed.

- the system as it was designed.
  They stop using it after three
  months and revert to old methods.

  You lose the support of upper
- management, especially when problems crop up.

  You get caught up in politics wi
- You get caught up in politics with middle management.

Sayrier trafficks of Management and Administ

Patant watch Recently issued U.S. patents (number, inventor/assignee, date)

omputer mouse handwriting transfer device. A writing instrument is connected to sliding plates under a computer mouse and transfers the handwriting movements to the mouse for electronic signatures. (5,798.755.

ectop terminal that suggests what TV programs to warch. The terminal dauphys a custom memo of programs that the subscriber is most likely to watch, based on mood, personal profile and history of previously watched programs. (5798,785; Discovery Communications, Inc., Bethesda, Md., Aug. 2, 2014).

prug-dispensing system for medical centers. A computerized storage cabinloaded with perpackaged pharmaceuticals, dispense a bar-coded package when it gets an order from an office computer. (5-797,515, ADDS. Inc., North Billerica, Mass., Aug. 25)

THE FIFTH WAVE by Rich Tenna

Steresburg, 1994, uses Deep Blue to plot, calculate and from best Gong Kampton out at perions open at local resille.



# Inside Lines

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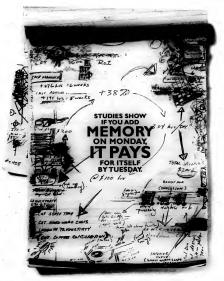
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